STATE OF CALIFORNIA
DEPARTMENT OF ENGINEERING

BULLETIN No. 2

Irrigation Districts in California

1887-1915

(Based on data gathered under co-operative agreement between the Office of Public Roads and Rural Engineering of the United States Department of Agriculture and the California State Department of Engineering.)

CALIFORNIA
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1916

Department of Engineering, State of California

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[1]Prior to July 1, 1915, the Irrigation Investigations of the United States Department of Agriculture with which the Department of Engineering has been co-operating was designated as the Office of Experiment Stations.

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By FRANK ADAMS, Irrigation Manager
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IRRIGATION DISTRICTS IN CALIFORNIA, 1887-1915.

INTRODUCTION.

The irrigation district is now an established institution in California. First authorized in California on a comprehensive basis in 1887, after an agitation in favor of neighborhood irrigation extending over at least fifteen years, and with extreme bitterness toward riparian proprietors, following the decision in *Lux* vs. *Haggin,* probably furnishing much of the motive force that carried the Wright act of 1887 through the legislature, it has been found to be a workable and desirable plan for community ownership and operation of irrigation works. It is not the form of irrigation organization that is numerically strongest in California, nor is it very likely to attain numerical precedence over the co-operative or mutual irrigation company. Neither is it the form of organization under which the largest acreage is now irrigated in this State. It is, however, the form of organization that is now most generally considered both for new and for the reorganization of old irrigation development in California, as it is the form that has been most largely employed in this State in the more important new irrigation development and reorganization of the present decade.[1]

The irrigation district idea did not originate in California. Prior to the passage of the Wright act, Italy, France, and Spain had provided for neighborhood irrigation systems to which the district plan is somewhat similar. Municipal organization had also been employed in drainage. The first irrigation district legislation in the United States was passed by Utah in 1865. That legislation provided that county clerks, on application of a majority of landowners in areas proposed to be organized, should create districts. In those districts landowners were the electors, if land taxes were to be levied, or taxpayers, if general property taxes. A few districts were formed under that act, but nothing important was accomplished. The first California irrigation district act was passed in 1872, "An act to promote irrigation by the formation of irrigation districts." It provided that owners of lands desiring to irrigate or drain them might petition the county supervisors for the formation of irrigation districts. It was required, in the case of any proposed district, that the petition should contain a description of

[1] This report deals only with irrigation districts organized under the original Wright act of 1887 and the act of 1897 as amended to 1915. Three additional district acts were passed in 1913, but these were drawn to meet special situations and should not be confused with the general California irrigation district act. These special acts were as follows: Statutes 1913, chapter 370, providing for the organization of county irrigation districts (changed by Statutes 1915, chapter 39, to county waterworks districts) and intended to facilitate water distribution for irrigation purposes from the Los Angeles aqueduct; Statutes 1913, chapter 387, providing for the organization of water districts and intended to facilitate organization of a large desert area along the Colorado River in Chuckawalla Valley; and Statutes 1913, chapter 592, providing for the organization of county water districts. Several districts have been organized under the first of these acts but there has been no organization under the other two. Statutes 1915, chapter 621, known as the "California Irrigation Act," another act designed to meet a particular situation, authorizes irrigation districts to reorganize under it, but no such reorganization is now contem-

the land, the names of the landowners, and the names of three persons whom it was desired should serve as trustees for the first three months. After verification and publication of the petition the supervisors were required to grant it. By-laws, powers of trustees, reports, and assessments were briefly provided for. The law was inoperative. In 1874 an act was passed, applicable only in Los Angeles County, providing for the office of county superintendent of irrigation, whose duty it should become, upon petition of a majority of the property owners in any given area, to examine the plans and the feasibility of any irrigation system proposed therefor, and thereupon to notify the county supervisors, who should then call an election upon the question of taxation for the construction of irrigation works, and the election of water commissioners, only taxpayers being permitted to vote in any such election. There was no organization under that act. In 1876 another special act was passed creating the Westside irrigation district. That law provided for five commissioners, an assessor, a collector, and a treasurer. It further provided for issuing twenty-year 8 per cent bonds to the amount of $4,000,000.00, to be redeemed by direct tax levy, and to be a lien upon the lands within the district. Surveys were made for a canal from Tulare Lake to Antioch, but all effort under the act soon lapsed. A final special act, creating Modesto irrigation district, covering the area now generally embraced in Modesto and Turlock districts, was passed in 1878. That act provided that direct taxes should be levied only for repairs and that the construction fund should ultimately be secured from the increase in the gross tax receipts expected to follow a contemplated rise in land values. The credit of the State and of Stanislaus County was pledged for the payment of bonds up to $500,000.00. As in the case of previous special acts, nothing substantial resulted from that one.

The period of the seventies and eighties in California was one of intense interest in and of great controversy over irrigation. The spirit of development was widespread, but large landowners and riparian proprietors seemed generally to be arrayed against agitation for community endeavor. When the office of state engineer was created in 1878, one of the chief duties of the state engineer was the study of irrigation, and in his first important report, presented in 1880, he outlined an act governing the formation of irrigation districts. For the first few years following, efforts in behalf of irrigation legislation seem mainly to have been directed toward the enactment of a general irrigation law for the State, and against riparian owners. In 1886, however, Mr. C. C. Wright, a lawyer of Modesto, who for some years had been carefully studying irrigation and who was familiar with progress in Europe and elsewhere, and who, also, represented a typical San Joaquin Valley community striving to obtain an irrigation water supply and to construct a community irrigation system in spite of opposing large

landowners, was sent to the legislature expressly, it has been said, to procure the passage of a law under which such communities as his own could build and operate their irrigation works. For ten years progressive farmers in Stanislaus County had been advocating the construction of an irrigation system to permit of substituting irrigation farming for the grain farming that had already begun to be unprofitable. They had not, however, been able to agree on any plan. The only hope seemed to lie in a law under which the opposing minority could be forced into compliance with the will of the majority, and to pay their just proportion of the cost. The decision in *Lux* vs. *Haggin* had just been rendered and advocates of irrigation by appropriation were ready to join enthusiastically in any measure that promised relief.

The irrigation district act passed by the legislature of 1887, known as the "Wright Act," remained on the statute books for ten years, with important amendments, drafted in the light of experience, adopted in 1889, 1891, 1893, and 1895. In 1897 it was rewritten, considerably enlarged, and re-enacted as an entirely new act, variously known as the "Bridgford Act," the "Irrigation Act of 1897," and the "California Irrigation District Act." Many further amendments have been made from time to time, and numerous supplemental acts have been passed, as well as a number of acts relating individually to the various districts that have been organized. The more important of the recent amendments and supplemental acts have had to do with financial aspects and state control.

Entirely aside from any value that may be attached, from an academic standpoint, to a rather full statement of an important movement in the economic development of the State, the value of a study of California irrigation districts is believed to be twofold. The disastrous mistakes made under the original California irrigation district act brought a tremendous economic loss to California, and a knowledge of those mistakes is the most effective preventive of a repetition of them. Secondly, irrigation districts are as a rule organized by people unused to effective business management, and the large general interest the State has in fostering right development warrants furnishing to those who are operating, or who contemplate organizing irrigation districts, whatever assistance available means will permit.[1]

[1]The data presented in this report have been gathered from time to time, during a period extending over fifteen years, and to an extent that might not have been warranted in connection with a movement less closely related to the agricultural development of the State than the irrigation district movement has been, and still is. Many connected with the early history of districts organized under the Wright act, and from whom data were obtained by letter or by personal interview fifteen years ago, are no longer living, and while all of the information gained from them and others could not be included in this report, as complete histories of each of the forty-nine Wright districts formed as the available data have made possible have been filed with the State Department of Engineering at Sacramento. The writer has been assisted from time to time in gathering data about the old districts by the following: Wells A. Hutchins, R. M. Gidney, A. L. Cowell, Miss M. J. Shields, H. J. Quayle, and Harry Barnes. Mr. Wells A. Hutchins has also assisted materially in reviewing court decisions affecting irrigation districts, and the irrigation district legislation passed in California.

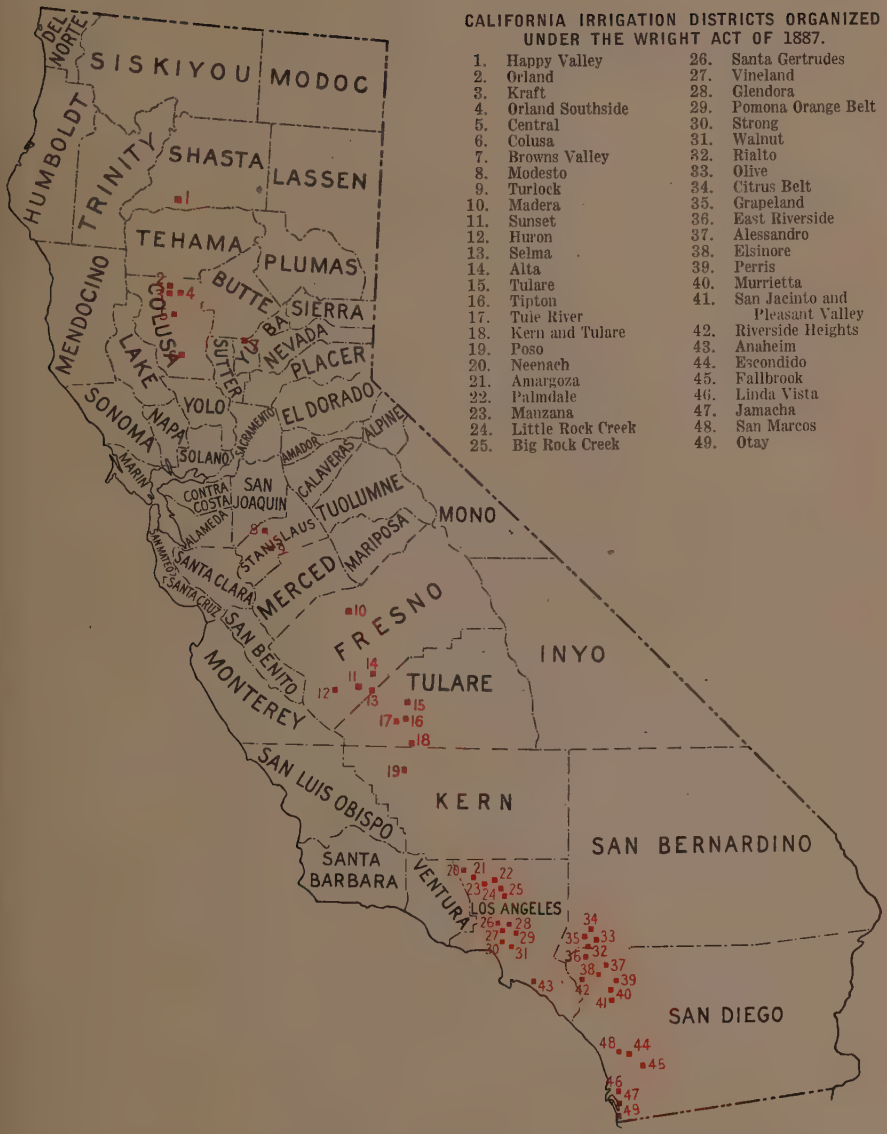
THE WRIGHT ACT OF 1887.

Briefly stated, this act sought to confer on farming communities powers of municipalities in the purchase or construction and the operation of irrigation works. Those powers included the right of eminent domain, the right to issue bonds against all of the real property within any area organized into an irrigation district, and the right to tax that property for the payment of the cost of any irrigation works acquired or built, and of their operation. "Fifty, or a majority of freeholders owning lands susceptible of one mode of irrigation from a common source, and by the same system of works," were authorized to propose the organization of an irrigation district before the board of supervisors of the county in which the lands included should be located. All electors in the area included were allowed to vote at district elections, but it was provided that at least two-thirds of all of the votes cast at an organization election should be favorable to organization in order to carry it, that a majority of all the votes cast at bond elections should approve the bonds submitted before they could be issued, and that two-thirds of all votes cast at elections on special assessments should approve such assessments before they could be levied. Full provision was made for the conduct of district elections, for meetings of boards of directors, and for their management of district business, for the issuance and sale of bonds, for the levying, equalization, and collection of assessments, including the sale of property for district taxes and its redemption within twelve months from date of sale, for the adoption of plans of works and for their construction, for the payment of all district expenses, etc. Boards of directors were given full authority to call special district elections on both the questions of issuing bonds and of levying of special assessments. District bonds were made payable in installments from the eleventh to the twentieth year after issue and were to bear interest at the rate of 6 per cent, and it was provided that bonds should not be sold for less than 90 per cent of their face value. In short, the act sought to clothe farming neighborhoods desiring irrigation with full authority at law to acquire by condemnation or otherwise all water rights and irrigation works that a majority of the freeholders and two-thirds of the electors voting in any district election in such neighborhoods should decide in favor of, with the taxing power of the State conferred upon such neighborhoods for financing their acquirement and operation.

ACTIVITIES UNDER THE WRIGHT ACT.

Organization of irrigation districts followed quite rapidly after the passage of the Wright act. The act was approved March 7, 1887, and before the end of that year Turlock, Modesto, Orland and Central districts had been formed, in the order named. Seven organized in 1888,

PLATE I.



CALIFORNIA IRRIGATION DISTRICTS ORGANIZED UNDER THE WRIGHT ACT OF 1887.

1. Happy Valley
2. Orland
3. Kraft
4. Orland Southside
5. Central
6. Colusa
7. Browns Valley
8. Modesto
9. Turlock
10. Madera
11. Sunset
12. Huron
13. Selma
14. Alta
15. Tulare
16. Tipton
17. Tule River
18. Kern and Tulare
19. Poso
20. Neenach
21. Amargoza
22. Palmdale
23. Manzana
24. Little Rock Creek
25. Big Rock Creek
26. Santa Gertrudes
27. Vineland
28. Glendora
29. Pomona Orange Belt
30. Strong
31. Walnut
32. Rialto
33. Olive
34. Citrus Belt
35. Grapeland
36. East Riverside
37. Alessandro
38. Elsinore
39. Perris
40. Murrietta
41. San Jacinto and Pleasant Valley
42. Riverside Heights
43. Anaheim
44. Escondido
45. Fallbrook
46. Linda Vista
47. Jamacha
48. San Marcos
49. Otay

Sketch map of California showing location of irrigation districts formed under the Wright Act of 1887.

including Browns Valley, Madera, Alta and Poso; six in 1889, including Tulare, Anaheim and Escondido; eleven in 1890, including Selma, Rialto and Perris; thirteen in 1891, including Sunset, Tipton, Allessandro, Fallbrook, Linda Vista and Otay; three in 1892; four in 1893, including Walnut; and the last, Amargoza, in 1895—in all forty-nine. From 1887 to 1893 petitions were also filed for the formation of ten more, in five of these cases the question of organization reaching a vote and being defeated.[1]

Because so few of the districts organized under the original Wright act succeeded and because so many were colossal failures, an impression has grown up that nearly all of them were speculative and fraudulent and that practically all defaulted. If this impression were justified it might not be considered in the interest of irrigation district development to delve too closely into their history, but rather to pass them over as of no live interest at this time, even at the expense of covering up an interesting phase of California economic history. But a careful study of all of the facts available fails to support such an impression. Dishonest and fraudulent districts there undoubtedly were—districts wholly speculative and with neither physical nor agricultural, nor even moral, justification. Nevertheless, in spite of the speculation and the dishonesty and the repudiation of some of the districts, and also in spite of the fact that only eight districts out of the forty-nine organized are now operating, the movement embodied in the irrigation districts organized from 1887 to 1895 was in its final results essentially constructive and forward, and as such is full of suggestion to those concerned in irrigation managed under the district form of organization.

A statistical list of the original Wright irrigation districts is given in the appendix. It does not seem wise twenty to thirty years after they were organized to attempt to classify them according to their feasibility. Some that were not feasible when organized would be feasible now. A number would have been feasible on a much smaller scale than attempted. Some had hardly an element of justification. Some were entirely feasible and still failed from general adverse conditions. One or two of those still active have never really succeeded.

Nor does it seem conclusive to classify these districts geographically, or according to their success or failure. While those organized in Sacramento and San Joaquin valleys, for instance, were mostly free from grossly speculative features, and while many of those organized in southern California were of a directly opposite nature, districts formed in all three of these general subdivisions of the State had important features and interests in common.

[1] A list of these proposed districts is given in the appendix.

In order to learn the most from these old districts it therefore seems best to consider them from the point of view of what seems to have been their purpose. Thus classified they might be grouped about as follows:

Districts essentially nonspeculative and formed to meet a bona fide demand for new irrigation works: Orland, Kraft, Orland Southside, Central, Colusa, Browns Valley, Modesto, Turlock, Huron, Tipton, Tule River, Kern and Tulare, Poso, Amargoza, Neenach, Palmdale, Pomona Orange Belt, Olive, Grapeland, East Riverside, Elsinore, San Jacinto and Pleasant Valley, Riverside Heights, Escondido, Fallbrook, San Marcos, Otay. (27)

Districts essentially nonspeculative and formed wholly or largely for reorganization or improvement of existing systems: Happy Valley, Madera, Selma, Alta, Tulare, Santa Gertrudes, Vineland, Glendora, Strong, Walnut, Anaheim. (11)

Districts essentially speculative: Sunset, Manzana, Little Rock Creek, Big Rock Creek, Rialto, Citrus Belt, Alessandro, Perris, Murrietta, Linda Vista, Jamacha. (11)

Nonspeculative Districts Formed to Meet a Bona Fide Demand for New Irrigation Works.

Of the twenty-seven districts placed in this group, many offer but little, if anything, of particular interest. Orland, Kraft, Orland Southside, and Colusa were merely unsuccessful attempts to accomplish what all of the smaller and many of the larger resident farmers wanted, but against which there was sufficient opposition to prevent conclusive action. In the main they were merely ahead of their time and victims of neighborhood lethargy and bickering. A portion of the land included in Orland, Kraft, and Orland Southside districts, and the water supply they counted on, are now embraced in the Orland project of the United States Reclamation Service. Huron, Tipton, Tule River, Kern and Tulare, Amargoza, Neenach, Palmdale, Pomona Orange Belt, Elsinore, San Jacinto and Pleasant Valley, Riverside Heights, Fallbrook, and San Marcos districts but represented ill-advised efforts to obtain water where in most instances there was no sufficient or stable supply. Olive covered only a very small area which, after confirmation of the organization and the bond issue voted, it was later thought best to supply with water by other means than a district organization. Grapeland district was prevented from consummating its plans largely through inability to obtain title to its proposed water supply in advance of undertaking development. It spent a large amount of money in the light of the best engineering data available, and about 1,000 acres of orchard is said to have been planted in the faith that the district would succeed, but an adverse court decision gave others superior rights to 2,700 inches of water from Lytle Creek and the district failed. Bonds traded by this district for

groceries were later held invalid. East Riverside district had all of the elements of success, was efficiently managed, built one of the first irrigation pumping plants in California, and has been eminently successful as an irrigation venture, but owing to difficulties in collecting district taxes before irrigation water was made available, defaulted its bond interest and found it best to reorganize into the Riverside-Highlands Mutual Water Company. All of the land of the old district is now watered by that company and the value of citrus groves established on that land is estimated by a well-informed banker at $2,000,000.00.

CENTRAL.

This district was organized November 22, 1887. Entirely feasible physically it was still a disastrous failure because of the legal and financial troubles that beset all of the districts in the early nineties, but most of all because the forced irrigation of the great holdings included, averaging 870 acres for the entire district and with forty owners holding an average of 2,225 acres each, could not possibly succeed under settlement conditions existing then or even now.

The petition for the formation of Central irrigation district was signed by 64 (supposed) freeholders and was accompanied by the objections of nine nonresident landowners whose attitude in a way seems now to have forecasted the failure of the undertaking. Still engaged in the "bonanza" grain growing of the earlier and more remunerative period when both yields and prices were higher, they conjured up visions of ruin with the bringing in of irrigation water. Irrigation would be bad for fruit, they said. It would even produce chills and would be a detriment to alkali lands. And besides, the irrigation of wheat and barley was not a success, anyway. All of the lands included, they averred, were not irrigable from the same source, the boundaries of the district were improperly described, and the Wright act was unconstitutional. Further, these objectors intended in the near future to include their lands in an irrigation district of their own which would include their residences so that they would have a voice in the proceedings. When election time came the opposition mustered only 51 votes out of 322 and organization prevailed.

Unlike many of the Wright districts, Central irrigation district started with a relatively complete engineering outline. The estimated cost was $638,900.00, and to meet this cost a bond issue of $750,000.00 was authorized by a vote of 189 to 36.[1] Bonds to the amount of

[1] In 1891 the estimated cost was raised by the consulting engineer to $940,364, and an additional bond issue of $250,000 recommended. The justification for this increase was said to lie in the omission of allowances for organization, rights of way, and litigation in connection with construction, the three items amounting to $181,000; in an increase in the cost of excavation from 8.5 and 8.75 cents per cubic yard under the first contracts to 13.5 and 15.5 cents in 1891, and to unexpected and excessive costs of rights of way, in one case reaching as high as $212 per acre, with the usual rates $50 to $70 per acre.

$150,000.00 are said to have been sold for cash and for a time the district had ample funds with which to meet contract installments. The market for bonds, however, soon became sluggish, and there were no buyers. Therefore, outside of small blocks given for engineering and legal services, rights of way, and preliminary purposes, the balance of the issue was mainly turned over to the superintendent of construction by nominal sale and by him disposed of to contractors on the best terms he could get. In these various ways a total of about $570,000.00 of the bonds were put out. While the method of financing construction that was adopted carried the work forward for a few years, the time came when contractors would no longer accept the bonds, and in order to bolster up the market a special report on the project was made in 1891 by a consulting engineer of wide reputation who was then largely engaged in reporting favorably on California irrigation districts. The district still remained, however, in financial distress, the opposition continuing their fight against it. In October, 1893, in order to clear up legal uncertainties and thus to stimulate bond sales, the district board brought confirmation proceedings under the then recently enacted statute permitting such proceedings. The superior court granted the confirmation sought by the directors but the old opposition, now ninety-one strong, appealed to the supreme court and finally succeeded in obtaining a decision that the organization proceedings of the district were illegal and null and void.[1] In a previous case[2] Central irrigation district had been upheld, but on other grounds the correctness of which was not questioned in the later case. The main points of the later decision were that the organization petition of 1887 was not properly signed, and that the signers of an organization petition must be *bona fide* owners of agricultural lands desiring to improve their lands by irrigation, and not merely the owners of town property and lots, as was the case with many of the signers of the Central irrigation district petition. While holding that bond sales made subsequent to this decision would be null and void, the validity of bonds already issued was not considered. In conformity with the decision the matter went back to the lower court and the new decree of the lower court, rendered March 1, 1902, was never appealed.

The adverse decision of the supreme court above cited put an end for all time to any thought of continuing the old undertaking, and out-

[1] *In re Central Irrigation District*, 117 Cal. 382.

[2] *Central Irrigation District* vs. *De Lappe et al.*, 79 Cal. 351. In this case *mandamus* was sought to compel the secretary of the district to sign the bonds, one of the property owners of the district being allowed to intervene. A number of objections to the district were raised, including objections to the description of the district in the organization petition, to the form of the bond filed by the petitioners, to the manner of publishing the petition, to modifications in the district boundaries made by the supervisors, to the manner of publishing the proclamation of the organization election, to the time of establishing the voting precincts, and finally to the form of the bonds. All of these questions were decided favorably to the district both in the lower court and on appeal.

PLATE II.

Fig. 1.—Central Canal, originally built by Central Irrigation District, as reconstructed near Willows.

Fig. 2.—Pumping Plant of Sacramento Valley Irrigation Company at head of Central Canal.

side of a brief formal activity in 1902 and 1903, for the purpose of leasing Central canal, no effort has been made to revive the old organization. Work on the system had practically ceased by 1891. At that time, while about 40 miles out of a total of 61.35 miles of main canal planned had been built, the system was not continuous and so could not be utilized; nor had any headworks been constructed, thus preventing the running of water in the portion of the canal that was ready to receive it. The leasing of Central canal January 6, 1903, had for its purpose the placing of the old district system in the hands of interests that proposed to utilize a portion of it for conveying water to lands along Sacramento River wholly or largely lying outside of the old district. This lease was made to W. M. Sheldon and was for a term of 50 years. Some years previously, but after the failure of the district, E. D. Beckwith had made filings on Sacramento River and had planned to utilize a portion of Central canal in connection with his appropriation. Lacking capital, he interested Sheldon, and these two, after the execution of the lease of the canal, formed the Sacramento Canal Company, which later was taken over by the Central Canal and Irrigation Company, and finally by the Sacramento Valley Irrigation Company. From this point forward the history of Central irrigation district becomes merged with the history of the Sacramento Valley Irrigation Company and of its subsidiary, the Sacramento Valley West Side Canal Company.[1] When these companies were organized it was supposed that Central irrigation district was finally entirely eliminated, in so far as its legal existence was concerned. The Sacramento Valley Irrigation Company gathered up most of the widely scattered bonds at a cost to it of 35 cents on the dollar, including accrued interest, and as one of the conditions of options secured on a large acreage of land in the old district, it agreed to guarantee lands not purchased under such options against any lien for these bonds. Later a compromise was sought to be entered into with the landowners by which certain concessions should be made to the company in rights of way and certain other matters, in return for the destruction by the company of all of the old bonds held by it. Litigation brought on by those opposing this compromise, however, has entirely upset previous theories as to the existence of the old district and as to obligations incurred by the new company in taking over the old Sheldon lease from the district and a congressional grant of a right to divert 900 cubic feet of water per second from Sacramento River obtained by the Central Canal and Irrigation Company April 16, 1906. The final decision in this litigation, rendered by the supreme court April 29,

[1] Through the agency of these two companies Central canal has been reconstructed and extended, water has been made available to approximately 100,000 acres of land, and a considerable irrigation development, including irrigation by pumping from wells, has taken place.

1915,[1] held among other things, that lands within the old Central irrigation district constitute the primary territory to which the original public use contemplated by the district and by the grant of congress extends and continues, and that when demanded such lands must be served with water from the new system before it can lawfully be taken for use on outside lands. Thus at this late date the old district comes in to complicate operations of the new companies that were organized on the theory that the old district was no longer of moment and could not in any way limit the delivery of water to the lands outside of it purchased and later largely sold by the various companies succeeding Sheldon and Beckwith. An even later decision of the California Railroad Commission, rendered June 14, 1915, that holds the Sacramento Valley West Side Canal Company to be engaged in public service, while not in any way affecting the old district, so changes the basis of water distribution by the new companies that ultimate entire reorganization, probably under one or more new districts, now seems altogether probable.[2]

BROWNS VALLEY.

Browns Valley irrigation district was started and its construction undertaken without adequate engineering study. A first issue of bonds in the amount of $110,000.00 was hastily voted and "sold" to a dummy purchaser (said to have been a janitor in a San Francisco bank) and by him traded to contractors at a reported price of 60 cents or less on the dollar. A second issue of $30,000.00 voted in 1892 was similarly disposed of, the net result from the two issues being headworks in North Yuba River, nine miles of flume, twenty-five miles of main canal, and some miles of laterals. Instead, however, of having works capable of watering nearly 45,000 acres, only about 4,500 acres could be covered, due to the uneven character of the ground. By the time these works were ready for use legal and financial difficulties had come on. Taxes were defaulted and resisted in the courts and while the earlier cases taken to the courts were won by the district or settled out of court, lower court decisions rendered in 1899 held the bond issue and all subsequent proceedings relating to them null and void. A similar outcome attended confirmation proceedings brought by the directors and other cases involving tax sales, and in 1902, after the district had been struggling along in spite of all difficulties and adverse decisions, and in some way getting a little water to the farmers, an unsuccessful attempt was made through *quo warranto* proceedings to stop any further corporate existence of the district, the case,[3] after going to the federal court on a

[1] *Byington et al.* vs. *Sacramento Valley West Side Canal Company et al.*, 148 Pac. 790.

[2] Since the above was written appeal from this decision has been taken to the United States court.

[3] *People ex rel Brady* vs. *Browns Valley Irrigation District et al.*, 119 Fed. 535.

question of constitutionality, finally being dismissed. Failure of the district to pay bond interest at last got the bonds into the federal court where on May 18, 1905, judgment was given conclusively establishing the district's obligation. After this judgment the futility of further opposition by the district was clearly apparent, and in the following year a compromise agreement with the bondholders was effected on a basis of 30 cents on the dollar for both principal and interest. The amount necessary to meet this compromise was $66,633.10, involving a levy of $21.60 per $100.00 on a total assessed valuation of $308,500.00. This assessment, although voluntary, was quite promptly paid by most of the landowners, and in June, 1915, the indebtedness had been met on the 30-cent basis so far as presented for payment.[1]

During the decade and a half of litigation following the construction period in this district little if any attention was given to care and operation of the canal system, and about the only land irrigated was a little at the lower end. A few years ago the district entered into an agreement with a power company, now succeeded by the Pacific Gas and Electric Company, under which agreement in return for power privileges on the canal, the power company agreed to maintain the system to its original capacity without cost to the district. Thus freed from the burden of maintenance, and with the old indebtedness compromised, the district took a fresh start and after twenty years of trouble began to realize something of the original aims of its organizers.

TURLOCK AND MODESTO.

These two districts were the first to be organized under the Wright act. The conditions around Modesto which led up to the passage of the Wright act have already been referred to. Practically the same situation existed around Turlock, except that a greater proportion of the voting population in Modesto district than in Turlock district resided in the towns. For instance, of 700 who voted for the formation of Modesto district, 526 lived in the town of Modesto, while of the negative votes, only 25 out of 181 were cast by residents of Modesto. In Turlock district organization was carried by 291 to 72.

The essential condition in both of these two districts was the failure of dry grain farming to continue a profitable industry, except on a scale possible to the large landowners only, and to them it was only profitable on a greatly reduced scale. Those who could still be successful because of their large acreages were mostly opposed to any change, while those holding smaller farms and who felt the pinch of the decreasing profits were as a rule anxious for water. The town

[1]On June 9, 1915, all but about $1,700 of the voluntary levy had been collected and bonds and coupons amounting to about $6,500 were still unpresented for payment.

residents whose prosperity depended on the general prosperity of the community could clearly see the advantage of the more diversified and intensive farming that irrigation would bring.

Almost immediately after organization both Modesto and Turlock districts went promptly to work to formulate construction plans, and as soon as preliminary surveys had been made and reports based on them filed with the boards of directors, both districts proceeded to vote what they believed to be sufficient bonds to complete the systems proposed; and with these bonds voted both districts undertook at once to make final surveys and let contracts. From the start, however, neither district was able to market many of its bonds outright for cash, and both sold them mostly through third parties.

It was originally expected that these two districts should obtain their water supplies from different streams. Tuolumne River was the only available source for Turlock district, but for Modesto district there was a choice between the Tuolumne and the Stanislaus, and the latter was first chosen. The advantage of both districts taking water from the Tuolumne was soon apparent, and accordingly they joined in the construction of La Grange dam, which was completed in December, 1893. Before this time the insufficiency of the original Turlock bond issue had become evident, and a second issue of the same size as the first had been voted. The original issue of Modesto district had been larger and its construction fund was not exhausted until the middle of 1895; but in July of that year a second issue was voted there, also.

While both Modesto and Turlock districts had been organized by ample margins over the necessary two-thirds of those voting, the minorities against organization did not cease in their opposition. This opposition mostly paid the first district tax under protest, but their next step was to refuse to pay and to seek injunctions against the enforcement of collections through the tax sales provided for in the law. In both districts suits were early carried to the supreme court but both were declared by that court to have been legally organized. In the case of Turlock district a friendly suit was brought to test the validity of the Wright act, this being a proceeding to compel the secretary of the district to sign the district bonds. In its decision given May 31, 1888,[1] the court held that the Wright act was constitutional, that irrigation districts formed under that act were *quasi* public corporations in the sense that the purposes for which they were organized were for the general public benefit, and that it was not necessary for their validity that the methods adopted for the levying and collection of assessments should follow exactly the mode provided in the constitution for the assessment and collection of taxes for general state purposes. The case involving Modesto district was a petition filed in 1889

[1] *Turlock Irrigation District* vs. *Williams*, 76 Cal. 360.

to have the proceedings for the issue and sale of the district bonds confirmed.[1] The lower court had confirmed the organization of the district, and with certain exceptions its judgment was confirmed. Among other things, the case involved the notice of the confirmation proceedings, the matter of including the town of Modesto in the district, the exclusion of 18,000 acres from the district after the organization and after the decision of the board of directors to sell $800,000.00 in bonds, and the resolution of the directors to sell $400,000.00 of the bonds after changing the source of supply. Not satisfied with this decision, the opposition appealed to the United States supreme court, by which the case was finally dismissed November 16, 1896. In spite of these two supreme court decisions upholding the districts and the validity of the Wright act, many decisions enjoining the sale of land for delinquent district taxes were given in the superior court, although the first of these were generally favorable to the district. Some of those who sought relief from district taxes were normally friends of the districts, but in such straitened financial circumstances, owing to the depression of the early nineties, that they were ready to take advantage of every opportunity to escape financial obligation. Every year in Turlock district from 1895 to 1900 blanket or individual suits against tax sales were brought and temporary injunctions obtained, but no attempts were made to bring the suits to final issue. In November, 1901, however, an issue was finally joined between Turlock district and those fighting it in the case of *Baldwin et al.* vs. *The Board of Directors of Turlock Irrigation District et al.* This case originally involved merely a contest between the taxpayers and the district, but later almost the entire number of Turlock district bondholders intervened to defeat the injunction prayed for. The decision of the superior court held not only that there had been no material irregularity in the issuance of the bonds, but also that those in possession of them were *bona fide* holders thereof and that hence the bonds were valid obligations of the district, even if there had been irregularity in issuing them. This was the last suit of importance in which the legality of Turlock district and its obligations were involved and from the time of the decision the people of the district faced forward rather than backward.

During most of the time that Turlock district was involved in litigation it had sought to continue construction and when the decision in the Baldwin case came, except for two of the main laterals, the heavy work of construction was already completed, and some water was ready for delivery to the district. This result had not, however, been accomplished without great effort, and without the failure of several contractors and very great difficulty in financing the work under

[1] *Board of Directors of Modesto Irrigation District* vs. *Tregea*, 88 Cal. 334.

way. In Modesto district there was less work to do and there had, perhaps, been more rapid progress in the earlier years of construction. By July, 1895, the headworks, the flumes in the upper nine thousand feet, and all earth work down to the district near Waterford, a distance of approximately twenty miles, had been completed. As in Turlock district, tax sales had been enjoined by the lower courts, but those in favor of the enterprise were able to keep control and to continue work until the spring of 1896, when the opposition elected two members of the board of directors pledged to use all possible effort to block progress. Shortly thereafter two of the old members of the board who had thus far supported the district resigned and two new directors were appointed who were with the opposition. Under the rule of the "antis" all work on the system was suspended for four years and no assessments levied to pay interest on outstanding bonds. A defense association was incorporated to strengthen the opposition, but times had improved and gradually sentiment changed, and in 1901 a new board was elected with at least three members in favor of going ahead. By this time the constitutionality of the Wright act had been upheld in the United States supreme court[1] and the opinion was growing in the district that there was no escape from the outstanding obligations. The bonds of the district were then valued at about forty or fifty cents on the dollar and unredeemed interest coupons could be purchased for 30 per cent of their face value. During this gradual change in sentiment some of the bondholders had sued in the United States courts for the defaulted interest and in August, 1901, a deputy marshal appeared with a mandate from the circuit court commanding the district to levy an assessment to pay an interest judgment against the district. With the arrival of this mandate from the United States court, Modesto district found itself substantially in the same situation that confronted Turlock district after the decision in the Baldwin case, and it also set about making plans for reorganization. As a first step a popular subscription of about $1,500.00 was presented to the new board of directors for the purpose of making such surveys and studies as might be necessary to determine the cost of completing the irrigation system that had been started. In October, 1901, plans for going ahead were submitted and an assessment of $50,000.00—the first since 1896—was levied for the payment of outstanding interest.

When the Wright act was revised in 1897 a supplemental act was also passed providing for the funding of irrigation district indebtedness, and in the new turn affairs had taken in Turlock and Modesto districts, it was clear both to the districts and to the bondholders that they should proceed under this law. Accordingly an agreement was drawn up

[1] *Fallbrook Irrigation District* vs. *Bradley*, 164 U. S. 112.

between each district and its bondholders under which the old indebtedness should be retired and a new financial start made by each district. Including interest and principal on outstanding bonds and floating debts, the total indebtedness of each district now reached approximately $1,350,000.00. To meet its indebtedness Turlock district issued 5 per cent bonds in amount of $1,082,000.00, or at the rate of 80.5 cents on the dollar, and in Modesto district funding bonds were carried by vote of 433 to 24, sufficient to pay the original indebtedness as it stood in January, 1902, on a basis of dollar for dollar, less a refund to the district of five years' interest on the funding bonds.

From the funding of their indebtedness in 1902, all doubt as to the future success of Modesto and Turlock districts disappeared, and both districts set resolutely about getting water to the landowners. Having its principal work already completed when the compromise was effected with the bondholders, Turlock district was already delivering water, and within three years water had been carried to 20,000 acres. Modesto district, however, had first to complete its system. In March following the compromise plans for building the distributing system within the district and for repairing the upper works were adopted and by July contracts for all of this work had been let. Through the co-operation of the bondholders and public spirited citizens within the district necessary funds were raised and on October 6, 1903, the work under the last contract was accepted. Before the season of 1904 was over, nearly 7,000 acres had been irrigated and a start had finally been made in changing Modesto district to the community of diversified farms contemplated when the author of the Wright act drafted that act fifteen years before.

POSO.

Among the California districts formed in a *bona fide* effort to build entirely new irrigation systems the three whose histories have just been given were the most conspicuous. Central district, as was pointed out, failed largely because decades ahead of its time, and because the larger holdings and the larger rainfall there made dry grain farming still profitable over a considerable portion of the district's area. Turlock and Modesto districts, on the other hand, succeeded in spite of obstacles because with their smaller rainfall and their smaller average holdings, the declining wheat market made the old-style dry farming no longer tolerable. For all three of these districts the water supply was ample and in each there was a sufficient farming population to be fairly representative of those to come. Poso district represented most strikingly a third type in this group, the type that failed because of physical rather than of human difficulties. Probably no district formed in a well-meant attempt to accomplish something was more ill-advised than it was.

With all of its 40,000 acres, Poso district mustered only twenty-six voters at the organization election, and with these twenty-six voters the wish for a water supply was entirely the father of the effort to obtain it. Even a half-million dollar bond issue was voted without any prior surveys or engineering estimates. Then engineers were employed and a ditch system laid out, and so hopeful were the people that they issued a glowing prospectus setting forth, among other things, that the district had "an undisputed, bountiful, invaluable water supply, perfectly practical project, planned for the procurement of the same; ample storage facilities, economical system for distribution, first-class drainage, rich, deep soil, and unexcelled climate." The county assessment roll, when the district was organized, gave the district lands a value of $502,000.00, but the district looked into the future and claimed a value, without improvements, "when the district works are completed," of eight times that amount.

The water supply for Poso district was to come from Poso Creek and the proposed works included a masonry dam 40 feet high, a 2.5-mile all-rock cut, 94 miles of canal, and two reservoirs, together holding "2,647 million gallons," "sufficient for ample irrigation of the district." After using $60,000.00 of the bonds for miscellaneous purposes the district agreed to turn over the remaining $440,000.00 to contractors for a completed system of works, to be finished within one year. Under this arrangement an inferior dam of some sort was constructed, also several miles of wooden flume, and a large canal was carried out some distance into or toward the district. No record has been found of the exact amount of the bonds that were actually disposed of, but it is presumed that most of them were, when finally it dawned upon the people who, without any experience either in irrigation or in large financial affairs, had rushed into the enterprise with a blind enthusiasm, that the water supply in Poso Creek was wholly inadequate for their needs and totally undependable. When, in the midst of their disappointment over the failure of the water supply, an unexpected freshet carried out their dam, the enterprise utterly collapsed.

Few of the old irrigation districts were involved in more litigation than was Poso district. The organization of the district and the bond issue had been confirmed shortly after the bonds were voted. Several of the cases that went to the higher courts resulted in interpretations of the Wright act that had not yet been made. One of the decisions in these cases held that confirmation proceedings would estop an attack on the legality of an organization and of a bond issue confirmed, or in other words, that judgment in confirmation proceedings is binding on all the world until reversed on appeal or set aside by some direct

proceeding instituted for that purpose.[1] In another of these cases it was held that public lands, of which the district was in considerable part made up, could not be included in an irrigation district, that neither the State nor its agencies could impose assessments thereon, and that the sale or patent thereof after issuance of bonds could not operate to charge the land with any pre-existing liability not assented to by the government or its grantee.[2] In a federal court case brought to *mandamus* the supervisors of Kern County to levy an assessment to cover an interest judgment, the *mandamus* was allowed and later confirmed.[3]

In spite of the failure of the irrigation works undertaken by Poso district and the abandonment of the district enterprise the lands included in the old district have gradually increased in value and the owners of these lands have long realized that some kind of a settlement must some day be made with the bondholders. This settlement is now in course of consummation, an investment company which has acquired most of the old bonds having offered in connection with a title insurance company to insure lands in the district against liability on account of the old bonds on payment of $11.00 per acre, or a little less than the original bonded indebtedness exclusive of interest. While only a few hundred acres included within the old district are now being watered, up to November, 1914, settlements had been effected on the above basis covering 16,715 acres.

ESCONDIDO AND OTAY.

The Wright act, as has already been indicated, was an outgrowth of conditions in Sacramento and San Joaquin valleys under which the larger riparian owners and the larger landowners were holding back irrigation development. Almost as soon as the act was passed, however, other communities recognized in it a means of irrigation organization of wide application. As the succeeding pages of this historical sketch will show, the southern counties of the State most largely undertook to utilize the act, thirty of the forty-nine districts organized having been in counties south of Tehachapi. Of these thirty southern districts six were formed in what now constitutes San Diego County, and of these six, Escondido and Otay, among those that seem to have had at least some justification, are of most interest.

Both Escondido and Otay districts, although considerably larger than they should have been, began with sufficient available water to justify irrigation development. Both were mainly started by the smaller landowners and openly or tacitly opposed by the larger ones. In Escondido,

[1] *Crall* vs. *Board of Directors of Poso Irrigation District*, 87 Cal. 140.
[2] *Nevada National Bank of San Francisco* vs. *Poso Irrigation District*, 140 Cal. 344.
[3] *Nevada National Bank of San Francisco* vs. *Board of Supervisors of Kern County et al.*, 91 Pac. 122.

which contained the larger population, energetic effort carried the enterprise all but to success, in the face of the bitterest and most vicious opposition. In Otay, on the other hand, discouragement came when the estimated costs were made public, and constructive activity soon ceased.[1]

Escondido irrigation district was in the first instance undertaken with but little open opposition, only fifteen votes having been cast against organization. About one-half of the land, however, was still owned by Escondido Land and Town Company, from which most of the residents of the district had previously purchased. With only "fifty or a majority of the holders of title, or evidence of title," to the lands to be included necessary to initiate a district, it was possible to get started without the acquiescence of the Land and Town Company, and the laying out of an irrigation plan and the issuance of bonds to carry it through, and also the construction of sufficient part of the system to irrigate about 1,000 acres, seem to have been accomplished without great difficulty. But the smoldering opposition grew along with a realization that the system planned was insufficient to water all of the irrigable lands of the district. The first real trouble came when interest on the bonds was due, the Land and Town Company refusing to pay its district assessments, amounting to about $11,000.00 per year, and others following its example. Every effort was made by the opposition to dishearten the people and by discouraging prospective land buyers, to reduce the ability of the smaller landowners to meet their district taxes and thus increase the growing spirit of repudiation. Bond issues aggregating $350,000.00 had been voted and sold through the contractor at 90 and 91 and about $320,000.00 had been expended for construction and water rights.[2] With this money spent and interest constantly accruing, and with the larger landowners refusing to pay district taxes, the failure of the enterprise was inevitable. While a few of the landowners paid their taxes in full even up to the time of disorganization, most of them ceased paying after the second and third years. In order to secure its two bond issues the district executed trust deeds conveying the whole water system to a trustee and in default of interest the trustee had taken over the system and was operating it on water tolls, although he was estopped from foreclosure and sale of the system by supreme court decision holding the trust deeds invalid.[3] After a long

[1] The area included in Otay district was 44,000 acres, mostly of the rolling character so largely used in citrus culture. When the district was formed it was thought that $5 per acre would provide a water supply, Moreno reservoir being planned as the source. The engineer's estimate for the cost was $1,200,000, or about $27 per acre. The engineer's report expressed confidence that the sum suggested would "provide for the district so abundantly as to bring to it a degree of prosperity" that would permit it "to afford any further refinement in distribution or amplification of capacity or supply that may be found necessary or desirable."

[2] The actual price said to have been paid by the real bond-buyer to the contractor was 75.

[3] *Merchants National Bank of San Diego vs. Escondido Irrigation District*, 144 Cal. 329.

period of depression, during eight years of which it is said not a house was built in Escondido, an agreement was secured with the principal bondholders by which, for a consideration of $200,000.00, with interest from the date of the agreement, the old debt then, counting interest, amounting to something over $500,000.00, was to be canceled. Of this $200,000.00 consideration $50,000.00 was to be used to repair parts of the system so that by getting water certain of the landowners who had previously held out would be ready to join in the proposed settlement. To carry out the settlement the Escondido Mutual Water Company was organized, each landowner taking stock at one dollar per share in proportion to his individual quota of district indebtedness. With this accomplished the district was disorganized, and in the midst of great rejoicing the bonds were burned September 9, 1905.[1]

The human situation in Otay district was wholly different from that in Escondido. Opposition at Otay was active from the beginning and is said to have been led by a defeated candidate for the first board of directors and by owners of hillside vineyards who did not want irrigation, as well as by a number of vegetable growers. The district got into trouble at once through mismanagement. A bond election that had been proposed was stopped when the estimate of the engineer who had been employed indicated that the cost of works would be much larger than anticipated. Shortly thereafter the directors undertook, without a special election, to levy an assessment of $9,000.00 to pay outstanding debts and continue the organization for another year, but on appeal to the courts the assessment was held invalid.[2] In the mean time a portion of the assessment had been collected but the district collector refused to turn the amount collected over to the treasurer, resulting in a suit against the collector for embezzlement of funds, and in another supreme court decision.[3] A third supreme court case involving Otay district was that of *Decker* vs. *Perry*,[4] but no important questions were involved. In spite of the litigation the district directors continued to meet and before a majority had been elected, pledged "with God's help," to wind up the affairs of the district; they had voted themselves mileage and salaries amounting to over $2,500.00 and had contracted debts considerably exceeding that amount. On November 14,

[1]One of those most active in supporting the district and finally in re-organizing it on the basis of a mutual water company recently stated that there was absolutely no excuse for the district not succeeding. The same water supply is now used and the dam in Von Sergern Canyon above Escondido is no higher than it was when the district was organized. While the mutual water company has made some improvements in the system, there is but little more land irrigated now than before the district disorganized. It is clear, however, that the mutual water company plan, under which the cost of irrigation is borne by those using the water, is fairer to all concerned than the old district embracing such a large area for which no water was available.

[2]*Woodruff et al.* vs. *Perry et al.*, 103 Cal. 611.

[3]*Perry* vs. *Otay Irrigation District et al.*, 127 Cal. 565.

[4]101 Cal. unreported cases.

1894, a vote was carried to petition the superior court for dissolution, but this was prevented by the unpaid creditors, for, although their claims had outlawed, and were no longer good in law, the court held that they still constituted claims in equity which would estop disorganization. With the exception of brief activity in 1910, when a new board of directors was appointed by the supervisors of San Diego County, and the land later included in San Ysidro district was petitioned out, Otay district has had no activity since then, and the district is still a legal entity.

Nonspeculative Districts Formed Wholly or Largely for Reorganization or Improvement of Existing Systems.

Of the eleven districts placed in this group, a number went through experiences of considerable interest. Happy Valley district was unimportant and was soon abandoned, a small co-operative company taking over the private system the district was formed to take over. Santa Gertrudes district was mainly formed as a means of financing the construction of a pipe line to replace a leaky flume. No one volunteered to take the $55,000.00 in bonds they voted, and while the district was waiting for something to turn up, it lost through nonuse the water right it started with. Selma, Vineland, Glendora and Strong are covered in the footnote.[1] Of the remaining five in this group, Alta, Tulare,

[1] *Selma.*—For some time prior to the formation of this district there had been water-right troubles along lower Kings River, chiefly involving claims of lower riparian owners. As a result the farmers under Fowler Switch and Centerville and Kingsburg canals found themselves threatened with water shortage. To better their situation they organized under the Wright act, including about 200,000 acres in their district, and from reading such records of the old district as are available it would seem to have been their intention to overcome the riparian owners almost regardless of how they should do so. Apparently, also, the farmer stockholders in Fowler Switch and Centerville and Kingsburg canals were quite willing to exchange their shares for district bonds, and at a sufficiently high price to arouse some local criticism. Real activity in the district, however, did not last long, for attempts to vote large bond issues failed twice in 1890 and again in 1891. Still those holding to the district idea continued the organization and succeeded in carrying assessments for a number of years, but apparently without accomplishing anything and with no clear purpose in view. Ultimately Fowler Switch and Centerville and Kingsburg canals passed into individual ownership under which they were operated on a water-right basis, and later passed into control of the Consolidated Canal Company, which united in one control the appropriation and riparian interests that had been in controversy. As early as 1891 an attempt had been made through *quo warranto* proceedings to have the district disorganized, both because it had failed to use the privileges and rights for which organized and because, in spite of the repeated decisions of the voters not to issue bonds, the salaries of officers were still being paid by means of assessments. The interesting phase of this attempt was the decision, affirmed by the supreme court (*People* vs. *Selma Irrigation District*, 98 Cal. 206) that the Wright act made no provision for judicially dissolving a district and that the court was without power to act. This decision led to the act of 1903 providing for such dissolution. (Statutes 1903, chapter V. *See, also*, amendments Statutes 1908, chapter 91; Statutes 1911, extra session, chapter 26, and Statutes 1913, chapter 39.)

Vineland.—This was a small district, the first of twelve organized in Los Angeles County, and is interesting both because of its present problematical status and because it indicates something of the handicap involved in uncertainty over water rights and in the lack of state regulation of water appropriations. The community that organized the district had been using some water from San Gabriel River, but increased diversions above, at Covina, Azusa, and Duarte, had reduced their supply. Bond issues amounting to $52,000 were utilized in purchasing water rights, in boring a 3,000-foot tunnel under the San Gabriel, and in constructing a cement-lined and pipe distributing system, both legal and engineering advice having guided the district in all they undertook. The tunnel under the San Gabriel, however, was so located

and Walnut are now active and their histories are therefore of some present importance. Madera and Anaheim districts both failed early, but because a new district is now proposed for Madera, and because Anaheim was one of the most worthy of the efforts under the Wright act that did not succeed, and also because the old Anaheim district was thoroughly typical of an important stage of general irrigation development in California, these two districts, along with the three that are still active, warrant fairly full consideration.

MADERA.

The history of this district has added interest because of the likelihood that, although the old district failed and was disorganized, the district form of organization is finally to prevail in the Madera community.

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as to withdraw water that otherwise would have passed on to the upper communities and on suit by them, affirmed by the supreme court (*Vineland Irrigation District* vs. *Azusa Irrigating Co.*, 126 Cal. 486) they were held to have rights superior to the district. Fortunately, prior to this decision the district had entered into agreement with a power company under which, in return for the district ceding to that company whatever rights it might have in San Gabriel River, the power company was to install a pumping plant in the district and furnish power for its operation. Under this agreement a well was developed giving about 100 inches of water (two cubic feet per second) so that the district got something for its effort and for the bond-buyers' money it spent. Since 1894, however, the district has defaulted in interest payments and so far as can be learned has done nothing in satisfaction of the bonds, which came due in 1910. The pumping plant (which has since been changed to a steam plant operated by the district) was managed under the district organization for a number of years, but being somewhat unsatisfactory, and irrigation districts by that time having come into rather bad repute, the board of directors resigned and no one voted at an election called to select successors. The former secretary has continued in possession of the records and on advice of attorneys the treasurer has continued to hold a balance of about $1,500 collected by assessment before the district was abandoned. From time to time interest coupons have been presented for payment, but this has been refused by the treasurer, he holding, on advice, that he could not make payment without giving preference to some of the claimants, and that he was authorized to pay out the money only on warrant from the district. Other than the case above referred to the district has not been involved in important litigation. Several suits were brought to annul tax sales by the district and to declare the bonds void. In two of these cases (136 Cal. 185, 140 Cal. 376) bondholders intervened. In the former case it was found that the bonds of the district were legally issued and that the tax sales in question were valid; in the latter case the action was dismissed. One suit was brought in 1903 to compel payment of bond coupons amounting to $1,356, but this was dropped on stipulation to resume after ten days' notice. It is said that about 2,000 acres is now being irrigated in the district, of which about 1,500 acres receives water from the well owned by the district. The water is handled by a local unincorporated co-operative company.

Glendora.—This district was formed, almost unanimously, to take over the Glendora Water Company, its organizers having mainly been landowners who had expected to obtain water from Glendora Water Company, but which that company seemed unable to provide. Agreement for the purchase of the Glendora system was entered into before the district was formed and it was intended also to develop water from tunnels back of Claremont. Misunderstanding in interpreting the agreement with the Glendora company resulted in that company actively opposing confirmation of the district and of its $170,000 bond issue. The lower court confirmed the district and the bonds but after appeal to and subsequent rehearing by the supreme court the lower court was reversed (*Cullen et al.* vs. *Glendora Water Company*, 113 Cal. 503) "for the reason that the board of directors of the Glendora irrigation district made no estimate of the amount necessary for any purpose" before calling the bond election. Among other points decided was one that where the supervisors had ordered the election of directors at large it was not necessary to provide more than one precinct in the election. Even before the decision in this case in 1896, the district plans had been practically abandoned and a mutual water company organized. The entire area within the old district boundaries is now irrigated by the mutual company.

Strong.—This district was unique in that it was organized to safeguard a water supply already available rather than to acquire a new one or to construct irrigation works. The lands embraced were part of the ranchito, near Whittier, formerly owned by Pio Pico and, since about 1855, served with water from San Gabriel River

Madera district was formed, and later voted an $850,000.00 bond issue, almost unanimously.[1] Opposition developed, however, as soon as confirmation proceedings were started. The superior court confirmed both the organization and the bond issue, but an appeal was taken by the larger landowners and the case sent back to the lower court for a new trial.[2] The attack on the organization concerned the validity of the organization petition and, in addition, the constitutionality of the Wright act was again attacked. Although deciding against the district in the matter of confirmation, the supreme court quite exhaustively reviewed and affirmed its previous decisions upholding the act.[3] Before this litigation was started the district had agreed on a plan of works estimated to cost $470,000.00, and steps had been taken to acquire the beds of Summit, Highland, Kellogg, and Shadow lakes, which it was proposed to use for reservoirs. With a view to purchasing the system of the Madera Canal and Irrigation Company the district had caused a valuation of the property of that company to be made, and proposed to purchase it for $100,000.00 in district bonds at par, but a definite offer either was never made, or was not accepted. While the successive boards of directors continued their efforts in behalf of the district, levying assessments for preliminary expenses in 1889, 1890, and 1891, continued opposition of the larger landowners and resulting litigation finally discouraged the people, and after a failure to compromise in 1891, propositions to disorganize and to levy an assessment of 16 cents on each $100.00 for clearing off all indebtedness were overwhelmingly carried, and the district dissolved April 18, 1896.

It seems very evident that Madera irrigation district failed because of an effort to accomplish too much, seeking an ideal rather than the best

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through Rincon ditch. Beginning about 1882, however, the owner of Puente Rancho on which Rincon ditch headed and through which it passed, had challenged the right of the lower users to the ownership of the ditch and for a number of years had exacted rental. Being dissatisfied with this arrangement and not having the right of condemnation as private users, the irrigators under Rincon ditch formed Strong irrigation district in the spring of 1893 and in the following year began proceedings for a decree of condemnation. That particular suit was not pressed, but another one was brought by individual landowners in an effort both to establish a prescriptive right to the use of the ditch and a right to the water carried. The lower court decided favorably for the landowners (*Strong et al.* vs. *Baldwin*, 137 Cal. 432), but its decision was reversed. In the second trial, however, the landowners were upheld both in the lower court and on appeal (154 Cal. 150). Activity by the district ceased in 1898 while the litigation was still pending, but the community has continued to operate Rincon ditch by means of a mutual water company, although as the full acreage of the district was irrigated when the district was formed, there has been no increase. One of the reasons given for letting the district organization lapse was dissatisfaction on the part of some of the users over the levying of uniform assessments throughout the district, as provided for in the Wright act. Users near the head of the ditch felt that they should not be obliged to pay as much for maintenance as those farther down. Under the mutual plan of operation the ditch was divided into three sections and the charge made smaller at the upper end and larger at the lower end than in the central section.

[1] The vote on organization was 292 for and 5 against; that on the bond issue, 243 for and 7 against.

[2] *In re Bonds of Madera Irrigation District*, 92 Cal. 296.

[3] See *Turlock Irrigation District* vs. *Williams*, 76 Cal. 360, and *Central Irrigation District* vs. *De Lappe et al.*, 79 Cal. 351.

practicable system. When the district was formed Madera Canal and Irrigation Company was irrigating an area since estimated at from 5,000 to 12,000 acres, and 5,000 acres more or less was receiving water from White House Canal, the remaining area in the district being entirely in grain or pasture. Yet, without the co-operation of the larger landowners, and without reaching any agreement with those holding riparian rights on Fresno and San Joaquin rivers, the people of the town of Madera and those holding tracts of 20 to 320 acres surrounding it sought to finance and organize an irrigation system larger than any that had ever been constructed in the State. Had the people within reach of Madera canal been able to concentrate on the purchase and improvement of that canal, their condition would have been very much better than it is at present. As in the case of other communities who attempted to operate under the Wright act, however, the community overestimated their power over the opposing and more strongly intrenched minority. The failure of the earlier enterprise has probably decreased the supply from Fresno River to which the Madera community can maintain a claim, yet that failure should render it easier for the present community to agree upon and to carry through a more feasible plan. During the past few years the question of forming another irrigation district has again come up and it is again proposed both to acquire the system of the Madera Canal and Irrigation Company and to obtain water from San Joaquin River, partly by storage above Pollasky. While it is planned in a general way to cover about 150,000 acres, the proposition to organize has not yet been sufficiently worked out to enable the community to know just what is feasible, nor have water-right questions on Fresno and San Joaquin rivers been sufficiently cleared up to indicate what is possible to the proposed new district in the way of an undisputed water supply.

ALTA.

One of the most interesting things about this district is that it succeeded, although with the usual financial difficulties before getting securely on its feet, and only after a compromise with the bondholders and a financial reorganization in 1902.

Alta district appears to have been promoted by the '76 Land and Water Company, which had built the '76 Canal, and was already furnishing water to about 19,000 acres, selling water rights at the rate of $200.00 for each 40-acre tract. Including the reimbursement to the holders of water rights under the canal for the amounts paid by them for water rights, the district exchanged $410,000.00 in bonds for the '76 system and utilized additional bonds to the amount of $133,000.00 in improving the old canal and in building laterals. Not being able to dispose of their bonds for cash, and being advised by

their attorneys that they could not exchange them for work, the district made informal agreements with contractors to purchase the branch canals after completion by them, the work to be done in a manner satisfactory to the district. During the dark days of the district in the nineties, however, when taxes were being contested, this novel irregularity in the disposal of bonds was the ground for a superior court decision August 12, 1898, that the bonds were void because no plan or estimate of the cost of the system of irrigation works was made by the directors before calling a bond election, and because the act of the district in surveying ditches and then having an understanding with certain contractors that after approval by the district those ditches would be purchased by it at so much per cubic yard amounted to no more than the employment of the contractors to do the work and was therefore illegal.[1] This decision, which was given in one of the suits brought by outside attorneys in their general campaign against the Wright act, did not, however, serve to invalidate the bonds, but merely added to the unsettled condition which was not finally cleared up until the district and the bondholders agreed to a refunding of the original bonds, of which $543,000.00 were outstanding, at a discount of 25 per cent. At the time of this refunding landowners in the district signed an agreement not to contest the new issue and that issue was confirmed by the superior court July 3, 1902. While the district failed to levy assessments for the payment of interest in 1898, 1899, and 1900, the interest defaulted in those years was paid with a discount of 25 per cent at the time of the compromise. Since the compromise and refunding Alta district has been steadily going forward and, as shown later in this report, is now in a much improved condition.[2]

TULARE.

The agitation that led to the formation of Tulare irrigation district goes back to the days preceding the passing of the Wright act in 1887. Several ditches had been taken out and were intermittently serving the territory about Tulare, but the people under them had not fared well and they made up their minds they could best improve their situation and circumscribe lower riparian proprietors through some community effort. For that reason they joined in bringing about the passage of the Wright act and the matter of organization was taken up shortly thereafter. At first it was planned to include all of the land

[1] This case was not appealed and no supreme court decision has been found covering this point.

[2] No case involving Alta irrigation district is known to have been carried to the supreme court except one involving damages decided against the district in 1910 (*McPherson* vs. *Alta Irrigation District et al.*, 112 Pac. 193). In suits brought in the superior courts of both Tulare and Fresno counties property of the district necessary to the objects of the district was held not to be taxable by the counties. Many of the suits involving Alta irrigation district had to do with water rights on Kings River.

south of Kaweah River between the foothills and Tulare Lake that was irrigable from that river, in all about 210,000 acres. This conception, however, soon proved too large, and after one landowner after another got himself eliminated the area of the district was finally cut down to 39,360 acres.

When Tulare district was organized not to exceed 3,500 acres, it is said, was being watered from Kaweah and Rocky Ford canals. Bonds to the amount of $500,000.00 were voted and $250,000.00 of these were used in the purchase of Settlers' and Kaweah canals. After building a portion of the main canal from the proceeds of the $50,000.00 in bonds sold for cash, the district contracted for the construction of laterals and the enlargement and completion of the main canal, paying for the work indirectly in bonds. Thus, the district was able to get started in the delivery of water. All of this time, however, more and more friction was being developed and with the panic of 1893, when it was hard for farmers to get prices for anything, a number of attorneys employed by some of the larger landowners and by landowners in other districts with a view to breaking down all operation under the Wright act, began to arouse a feeling that the district had been illegally managed and that the bonds need never be paid. The district had originally organized by a vote of 484 to 7, and assessments had been regularly levied from 1890 to 1894 and paid without contest. In 1895, however, few paid district taxes, for "being hard pushed by the panic the consciences of the people were made a little easy." Returns from the crops being grown, it has been stated, would scarcely pay the interest on the bonds, saying nothing of other taxes and living expenses.

While the sentiment for default was growing in Tulare district many of the substantial people held strongly together for keeping faith with the bondholders. As one has stated, "they had obtained the money in good faith, and had blown it in good faith, and were swamped in good faith, and should settle in good faith to the best of their ability." People holding that view, however, were in a minority and during the agitation and the panic property values within the district fell to almost nothing. For five years, it has been stated, "nobody nailed a board on a fence or planted a tree or a vine." In many instances crops were not planted, houses went into a state of dilapidation, and one bank and several mercantile establishments went out of business. While that state of affairs continued some water was kept running in the ditches, but the district itself practically ceased operating. At last it was realized that the only thing that could be done was to call the creditors together and offer to pay them as much as they could. After looking carefully into the situation those who were endeavoring to arrange a settlement decided that 50 cents

on the dollar, not allowing anything for accrued interest, was about all the people could afford to pay.[1] This basis of settlement was accepted by the bondholders and $273,075.00 was raised in order to carry it out, some of the opposition holding out to the last hour during which opportunity for such a settlement was to remain open. On October 17, 1903, Tulare district bonds were burned and from that day the district has had no bonded indebtedness; for, unwilling after their long period of trouble, to be subject to further assessments, it was decided to operate the system on a purely tolls basis. With the exception of one assessment for betterments, the district has entirely maintained itself and operated its works out of water tolls since the compromise.

From the date of the compromise values in Tulare district immediately began to return to their former figure. District officers were again elected and the organization once more became active, and although now operating largely only as a co-operative company, as indicated later, has been active ever since.[2]

WALNUT.

Although not fully representative of the early irrigation district movement—it contains only 869¾ acres and has never taken advantage of the bonding provisions of the district law—Walnut irrigation district has the unique distinction of never having had financial trouble and of having been uninterruptedly successful from the beginning.

The district is located near Rivera, southwest of Whittier. For a number of years prior to organizing the community embraced had been receiving water somewhat irregularly from San Gabriel River through Standifer or Ranchito Ditch, but without rights to other than surplus water, and without adequate means for distributing what water they did get. Standifer Ditch was then unlined and losses from it were heavy, and it occurred to the small community near Rivera that if they

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[1]The present prosperity of farmers in Tulare district prompted a banker of Tulare recently to say that it is no credit to the people of the district that they settled at fifty cents on the dollar, for if they had postponed settlement a little longer they would have been able to pay the indebtedness in full. Looking at the situation as it was in the panic years of the nineties, however, he considers that they accomplished a task that was very much to their credit.

[2]Tulare irrigation district had more than its full share of litigation, some forty cases being on file in the superior court of Tulare County up to 1910. The organization of the district and the bonds were confirmed as early as April 2, 1890. Notwithstanding this, the superior court of Tulare County, in numerous suits seeking to have the bonds declared invalid and lands released from paying assessments, decided that the district had been illegally formed and that the bonds were invalid. No record has been found of decisions of the supreme court of the State on the legality of the district, but in the case of *Shepard* vs. *Tulare Irrigation District*, first carried to the federal courts in California (94 Fed. 1) and finally to the United States supreme court (185 U. S. 1), decided March 24, 1902, just a short time prior to the final settlement, it was held that *bona fide* purchasers of bonds occupied an unassailable position without regard either to the original judgment of confirmation or the later judgments declaring the districts invalid. In this case the district and the individual defendants relied only on the claim that there had been some defect in the printing of the original notice of the petition to the supervisors for organization.

could save the losses in that ditch above their lands and also in distributing water among themselves their supply would be satisfactory. They found that by organizing as an irrigation district they could condemn a right of way through Standifer Ditch and that they would also then have a convenient means of operating their irrigation system. Shortly after organization they brought a condemnation suit, probably friendly, against Standifer Water Ditch Association, also asking for the right to enlarge Standifer Ditch. In May, 1895, a settlement was agreed upon and entered as a court decree, awarding Walnut district the right to enlarge and use Standifer Ditch, provided that the district should build a wooden flume or otherwise improve the ditch and maintain it to a certain point in return for the double privilege of using the surplus water carried and of carrying the additional water the district should divert in accordance with a 200-inch filing from the San Gabriel made shortly after organization. The provisions of this decree were complied with by the district, the wooden flume extending from the Santa Fe track to the Pico or Whittier road, and costing approximately $6,000.00. Later this flume was taken out and the ditch cemented at a reported cost of about $8,000.00, which included the cost of a short section of cement pipe. The district also purchased a two-fifths interest in 17 acres of water-bearing land at the head of Standifer Ditch.

Walnut irrigation district was organized with practically unanimous consent and has definitely improved the conditions that existed prior to organization. Instead of issuing bonds, all funds have been raised by assessment or water tolls. While assessments during the reconstruction of the system were a little heavy, the operating expenses have been exceptionally small and have been provided for by a charge of ten cents per hour per irrigating head used, the heads normally being about 200 inches. According to the agreement with the Standifer Ditch Company, the district pays all of the cost of maintaining from two to three miles of the ditch between the intake and the district line, and two-fifths of the remaining cost above the district. When assessments have been levied they have been voted practically unanimously and paid without delinquencies. The entire area in the district is irrigated.

In addition to the original condemnation suit, Walnut district has been involved in two suits that were taken to the supreme court, one of which,[1] was of importance. This suit had to do with the right of a landowner within the district to use outside of the district boundaries part of the water to which land owned by him within the district was entitled. The court held that under section 18 of the Wright act a landowner in an irrigation district had no right to water for use outside of the district, saying that "The right of a landowner of the dis-

[1] *Jenison* vs. *Redfield et al.*, 149 Cal. 500.

trict to the use of the water acquired by the district is a right to be exercised in consonance with and in furtherance of such ultimate purpose, viz, for the improvement by irrigation of lands within the district and in no other way."

Walnut irrigation district has been operated by a board of directors elected at large, although in practice selected to represent different divisions of the district. The district is chiefly devoted to walnut and citrus groves and is all irrigated. The present status of this district is described later.

ANAHEIM.

Anaheim irrigation district seems to have grown out of a rather general desire among the irrigators supplied by Anaheim Union Water Company to improve the water service of that company and to force the holders of the larger unirrigated tracts of the neighborhood to share the expense of the water development that was rapidly adding value to their lands. The district seems largely to have failed as a district because of being conceived on a too extensive scale, and because opposition that existed from the start was greater than it was possible to overcome. It strikingly illustrates, however, the great power of a minority to prevent the success of an irrigation district if determined to do so.

The history of Anaheim irrigation district is really the history of the critical period in the irrigation development of what is now one of the important agricultural communities of the State. Fortunately, that history, which is quite typical of the worthier but yet unsuccessful district organizations under the original Wright act, can be given largely in the words of one of the organizers and later presidents of the district, Mr. F. A. Korn, who, under date of September 15, 1900, when past 73 years of age, carefully penned an account of "irrigating thirty-three years in Orange County" in response to a request for information about the old district.

Omitting such portions of Mr. Korn's letter as can be omitted without breaking the story, he wrote as follows:

> The undersigned bought in March, 1867, in the old colony of Anaheim. Anaheim irrigated at that time about 1,100 acres, mostly in grapes; water came from the Santa Ana River about three miles east of Anaheim. The water right was bought from the Yorba's (an old Spanish settlement) in 1857.
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> Shortly after I came to Anaheim the Stearns rancho was surveyed and put on the market. The first settlers arrived in 1869. It did not take long before they found out they could not raise a crop every year except they had water to irrigate with. A few settlers close to Anaheim applied for water to the Anaheim Water Company and it was sold to them for $3.00 per acre for one share of stock in the Anaheim Water Company. The other settlers on the northern side of Anaheim

had to make their own ditches; it took several years before an irrigation ditch was made to the river. Even then it did not amount to much. It would not carry water in the summer months.

The legislature in 1872 (I believe) passed the so-called Bush act and under this act a number of farmers of Placentia had an irrigation ditch surveyed to Bedrock Canyon. They worked until their means were exhausted, it was about one-tenth part finished.

In 1875 or 1876 a gentleman bought a large tract west of Yorba and formed a company of all his neighbors and all those who had an interest in the unfinished ditch; this company was named the Cajon Canal Company. When in 1879 the Cajon Canal was finished, land which could be irrigated just doubled in value. In January, 1884, the Anaheim Water Company and the Cajon Canal Company consolidated and incorporated under the name of Anaheim Union Water Company with a capital of $1,200,000.00, divided into 12,000 shares, only 7,000 shares to be issued at present. The landowners had expected another rise in land values after a consolidation of the two water companies, but in this they were disappointed; a speculator would not improve his holdings knowing well enough they would bring big interest sooner or later. Time went along without much improvement, the Santa Fe Railroad was built, the town of Fullerton came into existence, and the boom of this part of the country was felt all over. The Wright irrigation law had passed the legislature and several districts under this law had been formed in the northern part of the State. Many shareholders in the water company were dissatisfied, believing that under the Wright act irrigation water could be got cheaper than the Anaheim Union Water Company sold it although the company never charged more than the cost of running expenses. Many meetings were held, resulting in a petition to the board of supervisors to grant us the right to form an irrigation district. It took about one year before the board of supervisors granted the right to form the Anaheim irrigation district; the land company and a few large landowners were against it. The first board of directors were elected and every farmer in the district believed the bonds would be sold before the end of the year, but they did not succeed.

When the next election was held I was elected director for the Anaheim district and was re-elected until the district was dissolved by the court. The board of directors under which I served did their best to sell bonds, but we never had an offer to sell our bonds for 90 cents on the dollar and for less than 90 cents we would not sell. A number of promoters and schemers made all kinds of propositions but we wanted to see cash to build reservoirs with.

Nearly four years had passed with us not being able to sell any bonds and $36,000.00 had so far uselessly been expended. The taxpayers began to think they had expended money enough to form an irrigation district. An election was held to dissolve the district which was almost unanimously carried. All our debts were paid, and the superior court dissolved the district.

Other data than are included in the above letter indicate that the controversy over the organization of Anaheim district was at times heated, and that some of the ablest lawyers of southern California were

arrayed on the opposing sides. It had been proposed to purchase the system of the Anaheim Union Water Company for $300,000.00 in bonds and to pay $40,000.00 in bonds for the rights of the Yorba irrigators. While those in control of the Anaheim Union Water Company had acquiesced in the sale of their system, a number of the larger shareholders and the irrigators at Yorba strongly objected to relinquishing to the district their water rights acquired about 1858 for fear that the water was to be spread over a too large area. A bond issue of $600,000.00 was, however, carried, but while the directors were considering and were about to consummate its sale, feeling became more bitter and the opposition redoubled their efforts, charging the directors with inefficiency and inability to handle so much money, and claiming that the bonds would be sold at a heavy loss, and the section irretrievably ruined. Taxpayers in the city of Anaheim, which was included in the district, joined with the opposition. Finally, some of those who had been active in favor of the district went over to the opposition and the long fight was given up.[1] The district was dissolved by the superior court of Orange County September 12, 1895.

Districts Essentially Speculative.

For the first three years after the passage of the Wright act no one used it as a cloak to cover up speculation. On the contrary, while many of the districts started during those years undoubtedly should never have been started, and regardless of the undue optimism of their organizers, there is ample indication that the purpose prompting their formation was essentially a *bona fide* and constructive one. To those who recall the frenzied wave of land speculation, especially in southern California, that culminated during the early nineties, it is not at all surprising that the Wright act should have been made use of as an agency in that speculation. The spirit and purpose of the act plainly limited its use to existing communities desiring, over the objections of an obstructing minority, to use the taxing power and the power of eminent domain to obtain or improve an irrigation water supply. Not being framed to cover purely speculative enterprises, no safeguards against its misuse were thrown around it, and it readily became an easy tool in the hands of manipulators. It is of no particular consequence at this time whether those who misused this law were honest or dishonest, nor will anything be gained at this time by criticizing their

[1] The area served by Anaheim Union Water Company, which is a mutual company, is now in a highly prosperous condition. Investigations of the use of water from Santa Ana River in 1912 showed a total of 13,000 acres being irrigated by this company, with a supplemental supply being provided to 5,245 acres from private wells. All of the land included in the old irrigation district has not, however, been watered. While during its formative period the district enterprise greatly inflated land prices, and in that way caused some heavy losses, the efforts to form it probably had as their chief result a valuable addition to the experience of the irrigators about Anaheim in managing their own irrigation affairs.

ethics. The period was a hopeful one and in the confidence men felt in the future some things were done that probably seemed proper then but which would not be countenanced now. So far as concerns some of the districts classed as essentially speculative, that is probably the most that can be said, and as to some even that probably is not justified. However, whatever of value is to come from a history of these old enterprises must come from a plain recital of how they operated and by what means they brought discredit on the law and disaster whose effects are in some cases still felt to the communities they embraced.

The Wright act was written to make it possible for a reasonable number of landowners in any community to bring to an issue the question of whether a means of irrigation should be provided, in spite of the opposition of large landowners who were content to farm their large holdings on a margin of profit per acre that would be prohibitive to the smaller farmers. So it was provided that "fifty, or a majority of the holders of title, or evidence of title," might propose the organization of an irrigation district. Fifty or a majority in a section already under cultivation was quite sure to represent a substantial interest, but fifty or a majority of dummy entrymen or purchasers, or even of *bona fide* entrymen or purchasers in a desert country brought in or "colonized" merely to make possible the initiation of an irrigation district, might represent no substantial interest whatever. So also two-thirds of all of the electors in a section already under cultivation, when called upon to decide as to organization, or a majority, when called upon to authorize a bond issue, were likely to stand for an interest sufficiently large to justify going ahead or trying to do so. On the other hand, two-thirds or even a majority of the electors in a "colonized" desert section were quite sure to represent but a very small percentage of the ultimate settlers who must pay the principal portion of any bonded indebtedness incurred.

Of the eleven districts classed as essentially speculative only Big Rock Creek and Little Rock Creek are now active, the former having been revived in 1914 and the latter about 1910. The present status of these two districts is described in connection with active districts but an outline of their early history and failure and of the history and failure of the other nine are briefly given below.

SUNSET.

The guiding spirit of this district was a promoter, aided by a group of people in Fresno and Selma. Its chief historical interest lies in what may charitably be looked upon as an approach to the grotesque.

Sunset irrigation district covered a strip of desert from one to twelve miles wide and about seventy miles long extending from near Mendota to Tulare Lake. Although a few had attempted from time

to time to establish homes there, the land included was almost wholly owned by nonresidents, with alternate sections railroad land. To accomplish organization a quarter section was subdivided into small lots and either given away or sold at nominal prices to those who would agree to vote for organization. Probably it was also prearranged that bonds should be voted, for a $2,000,000.00 issue was easily carried within three months of organization.[1] In general the scheme proposed by the promoters was to take water from Kings River by way of Summit Lake, irrigating 87,000 acres by gravity and 178,000 by pumping from Fresno Slough by means of seventeen 44-inch centrifugal pumps raising water through four 11-foot lifts. Cereals, it was stated, would never need but one flooding and six inches added to the natural rainfall would be ample. Grasses were to be served three times with four inches in depth at each wetting, "one foot to each 250 acres of land." The system was to include 500 miles of earthen channels and utilize 3,000,000 feet of lumber, and the gross water duty was figured at one acre-foot per acre. Unfortunately the engineer did not specify how he was to take care of seepage losses. Nevertheless, he was paid $20,000.00 in bonds or his services. He should have been satisfied, however, for only $300,000.00 in bonds was paid for rights of way and reservoirs and "water rights" on Kings River calling for 3,000 cubic feet per second after previous claims were satisfied, but with the title to any of the 3,000 cubic feet per second apparently never having been perfected either by use or court decree.[2]

In the heyday of its hope the directors of Sunset irrigation district were in no wise modest regarding the virtues of their enterprise. In an undated printed prospectus issued sometime after October, 1896, (the last date mentioned in the prospectus) some quite elaborate and variegated penwriting was resorted to in describing the results of

[1]It is quite evident from the record of the district that the plans of the system and its cost were worked out to the satisfaction of the promoters before the enterprise was started and it was apparently their desire to call for a bond issue at once. However, their attorney advised the directors at their first meeting "that it would not look right to order an election on bonds at the first meeting of the board," and accordingly this formality was postponed for two months.

[2]The record of the district indicates that quite early in its history some doubt arose as to the legality of the organization procedure that was followed. When the district was organized, as already stated, a tract within the district was subdivided and the parcels thereof sold or given away to those who would agree to help carry the election on the organization. On October 24, 1891, the attorney for the district wrote to the promoter in a much disturbed state of mind over the fact that some one connected with the district had expressed his doubts about the "freeholder proposition," meaning the colonization of "freeholders" to carry the election. "If it should come to the ears of the judge," the attorney stated, "he might feel called upon to institute an inquiry when otherwise a decree (of confirmation) would certainly be entered on the record showing." Evidently the promoter and the attorney resolved all doubts in favor of the district, for they were able to satisfy the superior court with the evidence presented and to secure a decree of confirmation. This decree, however, might well have been based on safer grounds, for when, after paying assessments for several years and seeing nothing accomplished, and after seeing interest on outstanding bonds defaulted, the nonresident landowners and the bondholders took the matter in hand they had no difficulty in getting the decree set aside as a fraud on the court and the district declared null and void.

irrigation at Riverside, "but" adds the prospectus, "with all its grandeur, Riverside can not compare in soil, climate, or any of nature's gifts, with Sunset."

Even after a lapse of nearly twenty-five years, and also even granting that many, acting in entire good faith, were prompted through misinformation or absence of information to attempt the impossible under the Wright act, it is difficult to look with patience on the operations of those who promoted and managed this district. Even as early as February, 1892, a prominent San Francisco bank had characterized Sunset district as a fraud. The most cursory public supervision, it would seem, should have prevented this district from ever being formed, saying nothing of the operations subsequent to organization.[1]

MANZANA, LITTLE ROCK CREEK, AND BIG ROCK CREEK.

In the activity under the Wright act, Mojave Desert, or Antelope Valley, was not overlooked. Of six districts formed there between 1890 and 1895, Manzana, Little Rock Creek, and Big Rock Creek have been classed as speculative, for they were all promoted by companies or individuals desiring to sell land and who either were misled by the extranormal water supply in sight during the late eighties, or took advantage of the unusual conditions of those years to consummate their plans. In each case "colonization" was necessary before a district could be organized, and in each water rights held by the promoters or acquired by them for the purpose were traded for district bonds. In each case, after considerable areas of land had been sold to nonresidents and in many instances planted to orchards, the water supply failed as the dry years of the nineties came on, and with this condition there was in each case a default in payment of taxes and in the meeting of bond interest and finally an exodus of the settlers. Manzana district disposed of about $40,000.00 worth of bonds, Little Rock Creek about $88,000.00, and Big Rock Creek in excess of $223,000.00. The water supply in Manzana district which purported to be sufficient for 3,000 acres dwindled in the dry years until there was sufficient only for domestic use on a few farms. Big Rock Creek district covered about 30,000 acres and the several hundred people said at one time to have resided in the district were reduced by the drouth to a very few, irrigating only about 100 acres. In Little Rock district the area embraced was 4,100 acres,

[1]On several occasions the board issued warrants to pay the interest on some of the bonds that had been disposed of, but in September, 1893, the directors decided that it was not advisable to levy an assessment to pay interest on bonds. The directors subsequently obtained an opinion from their attorney on the matter, which held that there was no doubt as to the meaning of the law, which required an annual levy to pay interest where there were outstanding bonds. "In the case of Sunset district, however," the attorney stated, "it seems to me it must have been apparent to those who took bonds of the district that the district would be unable to pay until the water should be applied to the lands. If such was the case they will, of course, feel no disappointment if accrued interest be not provided for until the water has been applied to the lands."

including about 1,300 acres of unpatented land. By installing a pumping plant near the intake of the district ditch the people of this district were able to tide over the dry years with a water supply apparently somewhat below 100 inches. Almonds largely made up the orchard crop planted in all three of these districts, and as a rule the land had been planted by the promoting companies and sold to eastern buyers who had never seen the land, with agreements to maintain the orchards for a stated number of years.

Manzana district has never been rehabilitated and its bonded indebtedness is still unsettled, with no plan of settlement in view, and with but a very small acreage now irrigated. In Big Rock Creek district a second effort was made to colonize the area by an eastern colonization company which had acquired a considerable area in the district and which is said to have taken some part in supporting the original colonization movement. In consideration of receiving additional district bonds, estimated at from $30,000.00 to $50,000.00 par value, this second company undertook to increase the water supply by driving a tunnel 2,600 feet into the bed of Rock Creek. Here again, however, failure was met, for only a small quantity of water was obtained and the settlers whom this second colonization movement had brought in also abandoned their holdings and moved away. A third effort to occupy the district was made in 1914 when a group of Los Angeles socialists began the establishment of a socialist colony there. The present status of this movement is given elsewhere. By getting the supervisors of Los Angeles County to appoint a new board of directors for the district those back of the present movement were able to resuscitate the old organization. February 3, 1915, a new board was elected by the people. The present promoting company has acquired about $60,000.00 par value of the old bonds and has located an additional amount of $65,000.00, and suits are now pending in the Los Angeles County superior court to obtain judgments on some or all of the bonds. Little Rock Creek district has also recently been rehabilitated. About ten years ago the few settlers who remained after the exodus of the nineties formed a mutual water company and undertook to acquire the old district works and in this connection petitioned the court for dissolution of the district. Being objected to by some of the bondholders, however, this plan was abandoned and a movement started to revive the district. An agreement was made with the bondholders by which the $88,000.00 of bonds that had been issued should be funded with $25,000.00 of new bonds, and in September, 1910, new bonds for the purpose were voted and also bonds to the amount of $35,000.00 which it had been stipulated should be used in improving the irrigation system. What has been done under this compromise and what has been accomplished in the way of agricultural development of the district are both told later in this report.

PERRIS AND ALESSANDRO.

The first to be formed of the Wright districts classed in this report as essentially speculative was Perris, which dates from June 2, 1890. About six months later it was followed by Alessandro district. These two districts strikingly illustrate some of the worst features of activity under the Wright act. The history of both of them is closely interwoven with the history of the various companies that were organized to exploit Bear Valley reservoir. Both seem to have been operated on the theory that the purpose in view justified any means necessary to accomplish it. Both passed through brief but stormy careers and both ceased activity with the failure of their supposed water supplies. Finally, twenty years after they ceased activity their bonded indebtedness has been disposed of, in the one case by having judgments amounting to $567,300.00 compromised at about 40 cents on the dollar, and in the other case by being held uncollectible because the bondholders had had notice in the printed prospectus of the district that the bonds were delivered to Bear Valley Irrigation Company "not for water, but for an executory contract to deliver water in the future."

Prior to the organization of Perris district land about Perris was mostly in small holdings and to a considerable extent was being hazardously dry-farmed to wheat and barley. The organization election was carried by 81 to 2, as was a bond issue of $442,000.00 shortly thereafter by 69 to 1. Later it was found that of 59 signing the petition for the formation of the district, only 8 were *bona fide* freeholders. At the time of organization no one had any clear notion as to where a water supply could be obtained, but every one was optimistic. Soon attention was centered on Bear Valley reservoir, some believing that the promoters of Bear Valley reservoir had instigated the formation of the district in order to get its bonds for development purposes, as was the case with Alessandro district. At any rate, when visiting Bear Valley dam and "while standing on that magnificent piece of masonry" it was agreed that that "gigantic reservoir" furnished "the safest, best, and most feasible system of water supply yet examined," and that if it could be had at satisfactory cost, "their land should have no other." On January 20, 1891, the district contracted with Bear Valley Irrigation Company for the exchange of $240,000.00 in bonds for "Class B" water rights in Bear Valley reservoir. About the same time they began the construction of a conduit to the district and a distributing system, the entire works of the district being then estimated to cost $710,000.00. By the exchange of bonds for material and labor, by the issuance of warrants and their later redemption in bonds, and by purchasing a portion of the pipe system as "real estate" after it had been laid, some $200,000.00 in bonds was expended on construction work and

one main pipe-line and distributing mains in the district were built. As a result of this activity water was delivered for a year or two by Bear Valley Irrigation Company, when the dry years of the early nineties came on. Then, however, the "Class B" rights for which the district had exchanged $240,000.00 in bonds turned out to be paper rights only, for all of the water supplied by Bear Valley reservoir was insufficient even for the holders of "Class A" rights about Redlands, Crafton, and Lugonia, and for reasons given more fully in connection with Alessandro district, Bear Valley Irrigation Company passed into the hands of a receiver. Orchards that were just getting nicely started died and the optimism that had thus far carried the organization along now turned into an intense depression. Many abandoned their holdings and at least twenty houses, it is said, were moved to Riverside. With the failure of Bear Valley Irrigation Company all hope of saving Perris district was abandoned.

The gradually increasing strife among the proponents and the opponents of Perris district furnishes one of the most interesting phases of the history of early California irrigation districts, and also indicates the utter futility of attempting to carry through an irrigation district in a community bitterly divided against itself. Only a few cool heads, it is stated, at one period prevented bodily encounter; one threat to kill on sight is mentioned in the data that have been gathered. Each side grasped at the slightest chance to check or discredit the other. The opposing group, forty or fifty strong, organized a branch of the Knights of Labor and held weekly meetings in the seclusion of the neighboring foothills. In this step they were met by the formation of the "Patterson Guards," made up of about an equal number who were supporting the district. Each organization is said to have been on a military footing with every member armed. Suit was brought to oust one member of the board of directors of the district on the charge that certain of his acts were illegal. He was arrested, but was surreptitiously tried, it is stated, by a friendly justice sitting at a "haymow" trial, and acquitted. On one occasion some of the "antis" had the entire board arrested and taken to San Diego for trial. A charge against the proponents of the district, alleged in a later suit, involved bribing the lawyer hired by the "antis" to fight confirmation proceedings to stay away from the trial. Finally, a source of bitter contention was the control of the local newspaper. At the start it was in the hands of those promoting the district, but the editor later went over to the other side, as did also the ownership, and from that time on bitterly attacked those in control. On one occasion the editor and proprietor of this paper and one of the "anti" directors had the pleasure of having themselves burned in effigy.

Alessandro district was even more closely identified with the Bear Valley Irrigation Company and its predecessors than was Perris. The original company, known as the Bear Valley Land and Water Company, was organized in 1883. This company first constructed Bear Valley dam at a reported cost of $75,000.00 and sold first rights to the water impounded to the landowners about Crafton, Lugonia, and Redlands.

In 1890 the Bear Valley and Alessandro Development Company was formed and it acquired a majority of stock of the first company, and also about 21,000 acres of land about Allessandro and Moreno, in San Jacinto Valley, which it proposed to supply with water by constructing a second dam in Bear Valley about 200 feet below the first dam, this new structure to increase the capacity of the reservoir to 80,000 acre-feet. In order to finish this larger project the development company promoted Alessandro irrigation district, all of the organization expenses of which it paid and which it dominated from the first. According to a prearranged plan the district forthwith voted bonds to the amount of $765,000.00, which it turned over to a second new company, known as Bear Valley Irrigation Company, which in the mean time had taken over the two former companies. In consideration of the $765,000.00 bonds of the district, Bear Valley Irrigation Company issued to the district more "Class B" water-right certificates and contracted to enlarge Bear Valley reservoir as previously indicated and to build conduits to and through the district, both the reservoir and the conduits, however, to remain the property of the selling company. All distributing works other than the main conduits were to be built by the landowners. According to allegations in one of the suits later brought against the district, three-fourths of the petitioners for the formation of the district, including two of those subsequently elected to the first board of directors, were employees of the selling company, and the engineer of that company was also made the engineer of the district. Thus, in return for $765,000.00 in bonds, most of which were disposed of in England and Scotland—some at a premium—the district obtained merely the "right" to receive water from works as yet unfinished, and as to the sufficiency of which there were no substantial data available, although the principal consulting engineer employed reported in a highly optimistic printed prospectus that the company could and would fulfill its contract to supply the district.

Apparently Bear Valley Irrigation Company started out with a show of keeping its agreement, but if data that have been collected and allegations in various suits can be depended upon as correct, much of the money ($130,000.00, July 1, 1891, $209,350.00 in 1893, and other amounts not mentioned in the records at hand) obtained from bonds and from other sources was used in paying dividends instead of for construction, although Bear Valley Irrigation Company had laid the foundation for

the proposed new Bear Valley dam in a substantial manner in 1893, and had also built a conduit to the district carrying something less than 1,000 inches. By December, 1893, however, Bear Valley Irrigation Company was completely wrecked and passed into the hands of a receiver, together with all of its promises, and the district found itself with absolutely nothing for its pains and its $765,000.00 in bonds. For a few years the district had collected district taxes and paid bond interest, but with the failure of the promoting company and its prior default in carrying out its contract, payment of both taxes and interest ceased. For a few years the receiver operated the portion of the system that had been built, but the dry years, beginning in 1895, demonstrated that the water supply was wholly inadequate, and that the "Class B" water-right certificates were but "mere phantoms" and represented nothing more than the vision of the promoters. After the utter failure of the water supply land prices that had risen from $10.00 an acre to $125.00 dropped to practically nothing, and nearly all of the five hundred families said at one time to have lived in the district moved away. If we can accept the view of one thoroughly familiar with the early history of Alessandro district "there probably never was a place that suffered as that did."[1]

RIALTO AND CITRUS BELT.

These two districts, like Perris and Alessandro, were twin promotion schemes, being organized in October and November, 1890. The enterprise back of them was the Semi-Tropic Land and Water Company. The 20,000 acres embraced in the two districts were purchased by that company at a low figure—the market price at the time in small holdings was about $25.00 per acre—and was to be sold at $175.00 and $200.00

[1]Perris district has been involved in much interesting litigation. In early days the organization of the district and its bond issues were confirmed in various suits, although it was later claimed that fraud had been practiced in one of them. In *quo warranto* proceedings started in 1897 the district was declared illegally organized and its rights forfeited, but this decision was reversed by the supreme court (*People* vs. *Perris Irrigation District*, 132 Cal. 289). In a later supreme court case (*Leeman* vs. *Perris Irrigation District*, 140 Cal. 540) it was held that no action can lie on bonds given for warrants in payment of labor and salary claims when the bondholder knew that the statute was being violated in the disposal of the bonds. Suits to collect from the district have mainly been brought in the United States courts. In a case carried to the circuit court of appeals (*Board of Supervisors et al.* vs. *Thompson et al.*, 122 Fed. 860) a judgment directing the issuance of a peremptory writ of *mandamus* to compel the supervisors of Riverside County to levy an assessment as provided in section 39 of the irrigation act of 1897 to pay a judgment against the district was affirmed but no collections were made under that decision. (Other federal cases involving Perris district bonds were *Miller* vs. *Perris Irrigation District*, 85 Fed. 693; *Miller* vs. *Perris Irrigation District*, 99 Fed. 143; *Thompson* vs. *Perris Irrigation District*, 92 Fed. 263; *Miller* vs. *Perris Irrigation District*, 116 Fed. 769, and *Perris Irrigation District* vs. *Thompson*, 116 Fed. 832.) In 1913 section 39 of the act of 1897 was amended to make it the duty of district attorneys to act in case of the failure of boards of directors to levy assessments required by law to be levied, and the amendment was held valid by the superior court of Riverside County on April 2, 1914, and the supervisors were ordered to levy an assessment against the lands of the district to pay numerous judgments then outstanding. In October, 1914, and again in March, 1915, levies were made by the supervisors of Riverside County to pay judgments aggregating about $455,000. These assessments, however, were made pursuant to a compromise with the bondholders by which judg-

per acre after a water supply should have been provided through the organization of the two irrigation districts. By selling off a number of small holdings enough voters were got in to organize the districts and to vote bonds—$500,000.00 in Rialto, and $800,000.00 in Citrus Belt. Thereupon the company obtained agreements by which it should furnish water to the districts at the rate of about one inch to each seven and one-half acres. Work on the Rialto system was started at once and after a number of years of effort about two-thirds of the total water supply contracted for was developed and a considerable portion of the distributing system built. By the spring of 1894, however, the narrow margin of working capital on which the promoting company had attempted to operate forced it into the hands of a receiver. This crisis terminated all effort to carry out the contract with Citrus Belt district and the bonds of that district, previously trusteed, were returned to the district and the district subsequently disorganized after paying off its outstanding warrants at 50 cents on the dollar. The agreement with Rialto district, however, was assigned to the promoting company's contractor, and he continued work on the system, in all laying about seventy-five miles of pipe. Up to this time and for another year the district continued to levy assessments and to pay bond interest, but in 1895, when the dry period came on and the artesian wells that had been sunk ceased to flow, the people became discouraged and refused longer to pay their district taxes. Many of the orchards began to die and to save themselves those using water formed the Citizens Mutual Water Company and by boring additional wells and installing pumping machinery, developed sufficient water gradually to develop a prosperous community around Bloomington, the mutual water company continuing the use of the district distributing system. Later the Citizens Water Company was reorganized under the name of Citizens Land

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ments aggregating $569,300 were settled for about forty cents on the dollar, and July 2, 1915, was set as the day for burning the bonds the above judgments covered.

Alessandro district was also in litigation throughout its existence and even down to 1913, more than thirty cases involving it being of record. The organization of the district and the bond issue were first confirmed and later declared illegal on account of irregularity, the supreme court in deciding this latter question holding that the board of directors had "no power to give all the bonds of the district for a mere personal promise of another that it will in the future lease some water to the district at a stipulated rent." (*Stimson* vs. *Alessandro Irrigation District*, 135 Cal. 389.) In 1905 what purported to be dissolution proceedings were carried through in the superior court of Riverside County without notice to the bondholders. On learning of the purported dissolution, however, bondholders representing claims aggregating $600,000 brought suit to have the decree of dissolution set aside and for judgment on their claims. The decision in this suit, entered in January, 1913, finally resulted in wiping out the entire bonded indebtedness. Not only did it throw out the dissolution judgment of 1905 as "void and a fraud on the court," but it declared the bondholders could not collect because, as previously indicated, they had had notice in the printed prospectus of the district that the bonds were delivered to Bear Valley Irrigation Company "not for water but for an executory contract to deliver water in the future." The confirmation judgment of 1891 was held void "for want of jurisdiction," and the judgment in the *quo warranto* proceedings of November 18, 1898, was declared valid and held to have terminated the existence of the district. With this judgment future action by the bondholders was dropped and the bonds have since been burned.

and Water Company, which is still operating the system. In the mean time, although inactive, the district has maintained its organization. The old bonds of the district, however, of which about $411,000.00 were issued, have not yet been settled, although heavy judgments have recently been given in the United States district court, and the collection of these and suits covering additional claims are still pending.[1] The Citizens Land and Water Company gathered up about one-half of the old bonds at reported prices ranging from 12 to 25 cents on the dollar, and offered in 1909 to assume the remaining outstanding indebtedness, then amounting to $260,000.00, on condition that all of the property of the district should be deeded to the company and the district disorganized, this proposal having been made after agreement and conference with the bondholders. When the proposition was submitted to the electors of the district, however, in 1910, it failed of approval by a vote of 54 to 71.[2]

MURRIETTA, LINDA VISTA, AND JAMACHA.

These three districts were formed in 1890 and 1891, the years of greatest activity in organizing under the Wright act. Murrietta district, then in San Diego County, although embracing 14,000 acres, was unimportant and accomplished nothing beyond sinking a single artesian well, and without voting any bonds, or incurring indebtedness, that could not readily be paid, ceased activity and was dissolved. It had been formed, in the first place, by a local land company that had acquired some 2,200 acres for subdivisional purposes. Jamacha district, originally promoted as Spring Valley district, was more feasible

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[1] Following the judgment referred to, Rialto district obtained the passage by the legislature of 1915 of an amendment to section 39 of the irrigation district act, the amendment providing "that in any district organized prior to 1891 the amount to be levied for the purpose of paying any judgment or judgments, shall not exceed the sum of $25,000 in any one year * * * ." Other similar attempts have been made to legalize what would have very strongly suggested repudiation, but the amendment submitted by Rialto district was the first one to pass the legislature. This amendment, however, did not receive executive approval. In judging of these efforts to obtain legislation that would lessen the burden of the landowner on account of the old district bonds, it should perhaps be remembered that the present landowners are not the ones who organized the district, and that present bondholders probably obtained the bonds as a speculation at a very low figure.

[2] Citrus Belt district was involved in no litigation of consequence, it having been saved that trouble by the wise advice of its attorneys that bonds could not be exchanged for work. Conditions have been quite different, however, in Rialto district. In an early case (*Rialto Irrigating District* vs. *J. R. Brandon et al.*, 103 Cal. 384) it was held that the provisions of the Wright act referring to the construction of "ditches and canals" and giving a district power to condemn property necessary for works were broad enough to include pipe lines, flumes, or other conduits usually employed in works of the kind for conveying water. In a lower court case in *Stowell* vs. *Rialto Irrigation District*, bonds received by the contractor from the Semi-Tropic Land and Water Company were held invalid on authority of previous supreme court decisions (*Hughson* vs. *Crane*, 115 Cal. 404; *Stinson* vs. *Alessandro Irrigation District*, 135 Cal. 389, and *Leeman* vs. *Perris Irrigation District*, 140 Cal. 540) because the contract of the company provided that bonds of the district were to be issued in part at least for construction work. On appeal, however (155 Cal. 215), this decision was reversed, the court saying in effect that where a district enters into a contract for the transfer to it at different times of specific water rights with completed pipe lines and rights of way, to be paid for in bonds to be issued only on delivery of a deed conveying the property, the bonds are valid.

and if properly managed could have succeeded for at least a part of the area included. This district was promoted by the owner of certain properties it was desired to sell to the district and by the owners of land who hoped to reap a profit in subdividing their holdings. The water supply disposed of to the district included the Barrett dam site, at which point water from Cottonwood and Pine creeks was to be impounded. These properties were purchased for $100,000.00 in bonds which were a part of a $700,000.00 issue that had been voted. An adverse bank report stopped the disposal of any further bonds, but at this juncture the properties that had been acquired were taken over by the Southern California Mountain Water Company and the bonds traded for them returned to the district. The district was finally dissolved May 5, 1909.

Linda Vista district, covering 42,600 acres on Linda Vista mesa north of San Diego, was similar in some respects to Jamacha district and was promoted somewhat in the same way—that is, those behind it were chiefly holders of mountain storage and appropriation rights and those who wished to increase their profits in real estate. In the general ignorance of irrigation matters common to the time, some outsiders rushed in in entire good faith, expecting to make quick fortunes. Their illusion, however, was not long-lived, for the financial plans of this district failed along with those of others, and no bonds were disposed of other than those traded to the promoters for filings on Pamo Creek and Santa Ysabel River, a storage site in Pamo Valley, and small areas and rights in Santa Maria and Dye valleys, in all $176,000.00. These old bonds hung over the district for twenty years, but were finally disposed of and the district dissolved April 15, 1914. During the interval, litigation had reduced all of the district's debts to judgments, all of which were acquired by a local corporation. This corporation returned $55,000.00 of the old bonds in exchange for the water properties purchased by the district twenty years previously for $176,000.00 in bonds, the remaining indebtedness being compromised for a total of $125,000.00 that was raised by assessment.[1]

Conceived in speculation, although honestly supported by many; far in advance of a legitimate demand for the development it would make possible, bitterly opposed by the owners of some of the larger holdings embraced, based on too meagre water supply and cost data in those early days of western irrigation engineering, ill-timed and managed by men either inexperienced in large affairs or not disinterested, Linda

[1]Linda Vista district was involved in litigation from the start, including obstruction suits, suits to enjoin tax sales, a suit by the city of San Diego to be relieved from district taxes (first decided in favor of the city, but reversed by the supreme court in *San Diego* vs. *Linda Vista Irrigation District*, 108 Cal. 189), suits to enforce the payment of bond coupons and warrants, an individual suit to dissolve the district, and *quo warranto* proceedings to set aside the district organization, the latter being decided in favor of the district both in the superior court and in the supreme court in *People* vs. *Linda Vista Irrigation District*, 128 Cal. 477.

Vista district tested the weaknesses rather than the constructive possibilities of the act under which it was created. Even with a water supply unquestioned and certain it would have been too large an undertaking to be economically and successfully carried through by nonresident landholders mostly waiting for a chance to sell out. That it failed when it did is without doubt to some one's great advantage.

THE IRRIGATION DISTRICT ACT OF 1897.

By the close of the first decade of operation under the Wright act the necessity for a radical revision of that act was fully apparent. The numerous amendments and supplemental acts that from time to time had been adopted had been drafted more with a view to meeting local needs of particular districts or to clearing up doubtful provisions, than to correcting abuses. The abandonment or complete collapse of all but six of the forty-nine districts organized, and the critical financial difficulties of all but one of those six, so discredited irrigation districts and the securities they were dependent on that friends of the district movement, particularly those connected with the few districts for which there was still some hope, in 1897 set about rewriting the original act in such manner as to make a repetition of previous disasters impossible. The Wright act had not failed because of what it contained so much as because of what it did not contain. In a time of less speculation and of less financial stress it could have well sufficed in those situations that had inspired it and to meet which it had been drafted. With complications arising from the speculative districts and from the financial panic of the nineties eliminated, such districts as Modesto, Turlock, Madera (on a smaller scale), Alta, Tulare, Happy Valley, and Browns Valley, in Sacramento and San Joaquin valleys, and a few in southern California would have succeeded without great difficulty, for the bringing in of water would gradually have broken down local opposition. The time had not come, however, when communities unused to working together or to the management of large affairs could withstand both the critical industrial conditions of the nineties and the bitter onslaughts that were made on the basic act under which they were attempting to operate. The decision of the United States supreme court sustaining the constitutionality of the Wright act,[1] following a decision in the lower federal court holding the act unconstitutional,[2] was delivered November 16, 1896, after previous argument by some of the foremost lawyers of the times, including a former president. Thus, those who went to the legislature of 1897 with a redraft of the act did so with knowledge that its fundamental principle was at last unassailable.

[1] *Fallbrook Irrigation District vs. Bradley*, 164 U. S. 112.
[2] *Bradley et al. vs. Fallbrook Irrigation District et al.*, 68 Fed. 948.

The essential character of the Wright act was not affected by the amendments of 1897. While the original act was repealed, the new act was in many of its provisions but a slight verbal revision of the old one, with the three separate confirmation, inclusion, and exclusion acts of 1889 added. Radical changes were, however, made in the procedure for organization and for incurring indebtedness. Instead of giving to fifty or a majority of the landowners in any proposed district the right to initiate such district before the supervisors, the amended act required "a majority in number of the holders of title or evidence of title to lands susceptible of irrigation from a common source and by the same system of works, representing a majority in value of the lands," and for the former provisions permitting the boards of directors to call bond elections and to acquire water rights and works and other property necessary therefor without restriction, the amended act prescribed that a petition signed by a majority of the landowners, representing a majority in value of the lands, should precede the calling of any bond election and any purchase of works or other real property at a price exceeding $10,000.00.[1]

IRRIGATION DISTRICT LEGISLATION SINCE THE ACT OF 1897.

Attention has already been called to the revision of the Wright act of 1887 that was embodied in the act of 1897. The restrictions imposed by the amended act on the organization of irrigation districts and on the incurring of indebtedness by boards of directors were planned virtually to stop new development under the law, and for more than ten years that was their effect. The legislature that substituted the amended law for the original Wright act also passed what is known as the funding act[2] under which irrigation districts were permitted to discharge their indebtedness with new bonds.[3] For the next four years the law was left unaltered, but beginning in 1901 and more particularly

[1]Among the more important of the other new features in the act of 1897 were the following: Provision for right of appeal to superior court on order of supervisors on organization petition; provision for contest of election on organization; provisions for consolidation, where desirable, of certain offices and for fixing by boards of directors of bonds of treasurer and collector; provision for annual financial statements; provision that directors need not reside in division from which elected; provision that assessments to complete works when there should be no money in the construction fund and no bonds should be voted could only be levied after first having been approved by a majority vote of the electors; exemption of district property from state and county or municipal taxes; provision that bonds should bear five instead of six per cent, that they could not be sold below par, and that they should be paid from the twenty-first to the thirtieth years instead of from the eleventh to the twentieth. In addition, the act of 1897 omitted, among other things, the former provision that district bonds could be used at their par value in payment for lands, water rights, etc.

[2]Statutes 1897, chapter CCLIV, p. 394.

[3]Under this act Modesto, Turlock, and Alta districts, and some years later, Little Rock Creek district, refunded their old indebtedness and otherwise reorganized. (*See* histories of these districts in text.)

in 1909, 1911, 1913, and 1915, amendments and supplementary acts were adopted that have greatly changed and strengthened it, and while it is not yet in the final form desired by some of its friends it stands in many particulars as tested, workable, and satisfactory. Many of the changes that have been made have dealt mainly with matters of routine and detail. Some have been intended to meet the needs in individual districts. The more important of the changes of general application are summarized below.

BONDS.

The first amending act affecting bonds was passed in 1901[1] and related only to the funding act of 1897. This act amended three sections of the funding act and repealed six sections. Thereafter no legislation was enacted affecting bonds until 1911, when the first statute was passed providing for investigation and report on bonding issues by a state commission, composed of the attorney general, the state engineer, and the superintendent of banks. This initial act did not prove satisfactory and it was superseded a few months later by a new act,[2] but this in turn was superseded in 1913,[3] and was slightly amended in 1915.[4] The enactment of 1913 as amended in 1915 is now in force. In general it provides that on application from an irrigation district the state irrigation commission, composed of the attorney general, the state engineer, and the superintendent of banks shall investigate and report on essential matters having to do with the water supply of such district, the fertility and irrigability of its soil, the feasibility of its irrigation system, the market value of its water rights and works, the market value of the lands embraced, as to whether the aggregate amount of the authorized bonds outstanding or unsold exceeds 60 per cent of the aggregate value of lands, waterworks, etc., owned or to be built or acquired, and as to the number and amount of bonds available for the purposes of the act or that may be available. If the report of the commission is favorable the law provides that the bonds in question shall be certified by the state controller and that all bonds so certified shall be legal investments for all trust funds, and for the funds of all insurance companies, commercial and savings banks, trust companies, and for state school funds, and be placed on a par with bonds of municipalities, counties, and school districts, as to investment and security. Thus, in place of the unlimited authority of boards of directors, under the original Wright act, to issue irrigation district bonds

[1] Statutes 1901, chapter CLIX, p. 514.
[2] Statutes 1911 (extra session), chapter III, p. 3.
[3] Statutes 1913, chapter 366, p. 788.
[4] Statutes 1915, chapter 419.

with no report whatever as to feasibility, the State government has now provided that bonds of districts meeting the legal and financial requirements of a state commission, while not in any way endorsed by the State, shall be on a par for investment purposes with what are usually classed as standard securities.[1]

Changes in the bonding provision of the district law made in 1913 were important because, among other things, they marked a beginning in a larger measure of State supervision and radically changed the bond provisions.[2] By amending section 30 of the act of 1897 they provide that engineering estimates of the cost of new works shall be made by a competent irrigation engineer whose report must be submitted to the state engineer, the latter to report his conclusions within ninety days, particularly with reference to the water supply available and the feasibility of the proposed enterprise. This change was modeled after the Idaho law. While it does not give the state engineer veto power over a proposed bond issue, it requires his report thereon, and it is the presumption that no bond issue can be voted, or if voted, be sold, in the face of an unfavorable report from the state engineer. An amendment to section 31 makes the bonds payable from the 21st to the 40th years after issue, instead of from the 21st to the 30th years previously provided. The same amendment changes the rate of interest on irrigation district bonds from 5 per cent to not to exceed 6 per cent, the rate to be determined by the directors. An amendment to section 62 removes the prohibition against the sale of bonds for less than par and permits them to be sold to the highest responsible bidder. A new section (32½) provides that bonds authorized before the above amendment and not sold may be sold for less than par if such sale is sanctioned at a special election by a two-thirds vote. Another new section (54½) provides that during the construction of works under the proceeds of a bond issue the secretary of the district must within a week after each regular board meeting send to the state engineer copies of all reports on works under way, together with a financial statement,

[1] The irrigation commission has already passed favorably on bond issues for South San Joaquin, Oakdale, Modesto, Turlock, Anderson-Cottonwood, and San Ysidro districts, and has made investigations as provided in the act in Imperial, Alpaugh, and Terra Bella districts.

[2] Statutes 1913, chapter 578. The legislature of 1913 also passed the following: Statutes 1913, chapter 96, p. 107, amending section 1 of chapter 522, Statutes 1907, relating to deposit of money belonging to any county or municipality in any bank in the State, by including irrigation district bonds among the bonds that may be lawfully given as security for such deposit; Statutes 1913, chapter 97, p. 101, amending section 676 of the Political Code to permit the proceeds from the sale of state school lands under certain conditions to be invested in irrigation district bonds; and Statutes 1913, chapter 98, p. 108, amending section 3, Statutes 1907, chapter 50, p. 67, to permit the state treasurer under certain conditions to accept irrigation district bonds as security for state funds.

and gives authority to the state engineer to examine the affairs of the district at any time and to call for special information and reports thereon.[1]

A bond amendment made in 1915[2] provides that in all cases subsequent to January 1, 1910, where directors have passed a resolution calling for a bond election and where four-fifths of the electors voting have favored such issue, and the directors have provided for it, all proceedings connected therewith and all bonds sold hitherto or later are valid.

ORGANIZATION.

The sections of the act of 1897 relating to organization were amended in 1909,[3] 1911,[4] 1913,[5] and 1915.[6] The most important of the amendments were made in 1911 and 1913. In 1911 holders of possessory rights under receipts or other evidence of the rights of entrymen or purchasers under any law of the United States or of California were made eligible to sign a petition for the formation of an irrigation district. At the extra session of 1911 section 4 was amended to abolish all right of appeal from the finding of the board of supervisors as to the genuineness and sufficiency of a petition and notice for organization, except by the State itself. The principal change in organization procedure was made in 1913, sections 2 and 3 being amended to provide that copies of petitions to boards of supervisors for the formation of irrigation districts shall be filed in the office of the state engineer together with copies of resolutions of the supervisors relating thereto, and also to provide for a report by the state engineer as to "whether any condition or conditions exist that would justify him in reporting

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[1]The legislature of 1915 adopted a number of important amendments to the district act covering, among other things, matters pertaining to organization, co-operation with the federal government, and supervision by the state engineer. (Assembly Bill No. 1188.) Just before the end of the session a new section was added, in the interest of a proposed development in San Joaquin Valley, which would make a petition for the organization of a district sufficient if it should be signed by 60 per cent of the holders of title or evidence of title to the lands to be included, provided such 60 per cent should represent 25 per cent in value of such land. Opposition to this proposed new section and to at least one other feature, of relatively minor general importance, prevented the measure from receiving executive approval. The bill gave the state engineer veto power over the organization of new districts. Section 18 of the act of 1897 was amended to provide that water should be apportioned ratably only "as far as practicable," and the right of assigning the share due any taxpayer was taken away. Section 30 was amended to make more specific former provisions regarding the report of the state engineer on bond issues; also the petition necessary prior to calling of a bond election was eliminated and the number of votes necessary to carry a bond election was changed from a majority to two-thirds. Section 54½ was amended to provide more specifically than before for reports to the state engineer of progress on work being done with the proceeds of bond issues and a new section (54¾) made it the duty of the state engineer to give information to persons contemplating the formation of new districts and also to advise freely with the governing boards of organized districts. In all the bill amended seventeen sections of the act of 1897 and added four new sections.

[2]Statutes 1915, chapter 507.

[3]Statutes 1909, chapter 22, p. 12.

[4]Statutes 1911, chapter 517; Statutes 1911 (extra session), chapter 36, p. 139.

[5]Statutes 1913, chapter 578.

[6]Statutes 1915, chapter 696.

against the organization of the proposed district." The amendment gives the state engineer but thirty days in which to file his report, and it is to be noted that the report called for is merely a negative one. These provisions, like those having to do with the report by the state engineer on proposed bond issues, already cited, were patterned after the Idaho law. If the state engineer reports unfavorably as to the feasibility of a proposed district no further action can be taken by the supervisors unless they be requested in writing by three-fourths of the holders of title or evidence of title to grant the petition; except that in lieu of such request the supervisors may modify the plans in accordance with recommendations by the state engineer. The act providing this supervision by the state engineer also amended section 61 to provide that before the collection of any assessment in any district the directors may incur indebtedness up to $2,000.00 for districts containing 4,000 acres or under, or in the case of districts exceeding 4,000 acres, to one-half as many dollars as there are acres in the district, up to $50,000.00, warrants bearing 7 per cent per annum (changed by Statutes 1915, chapter 696, to not to exceed 7 per cent) to be issued in payment of such indebtedness. A further addition to this section in 1911 specified that demand warrants presented when no funds were available should bear interest at the rate of 5 per cent; also that whenever money was available for payment of all outstanding demand warrants or whenever the directors ordered that all warrants presented for payment prior to a certain date be paid and money was available therefor, interest thereon should cease with the first date of publication of notice of these facts. By statute of 1915[1] the 5 per cent rate of interest on demand warrants after presentation for payment was changed to a rate to be determined by the board of directors, but not exceeding 7 per cent. The amendment effecting organization made in 1915 among other things specifies that lands covered in an organization petition need not consist of contiguous parcels and that in certain cases the "actual" owners of property shall be considered the owners for all of the purposes of the act, that owners of undivided interests may sign for such interests and that each owner shall be considered as one assessment payer, and that guardians, executors, administrators, or other persons holding property in a trust capacity may sign any petition provided for in the act when authorized to do so. Section 72 is amended to provide that in confirmation proceedings all findings of fact or conclusions of boards of directors or of boards of supervisors shall be conclusive unless contested within six months after such findings or conclusions are made.

[1]Statutes 1915, chapter 696.

ELECTIONS.

A number of changes have been made in the procedure covering elections in irrigation districts. In 1909[1] two sections were amended in matters of detail. In 1915[2] an addition was made to section 19 providing that if an election for officers is not held as provided by law a special election shall be called on petition of 10 per cent of the electors residing within the district. This amendment was made to meet a situation in one of the old districts organized in San Bernardino County. Up to 1915 section 5, relating to election of the first board of directors, provided that if requested in the organization petition to do so, boards of supervisors might provide for three instead of five directors, to be elected by divisions or at large, as specified in the petition. Section 28 formerly permitted boards of directors, on petition of a majority of the holders of title or evidence of title of a district, to change the number of directors to three or five, to be elected by divisions or at large as petitioned. By amendment in 1915[3] such action is made mandatory on petition rather than permissive, but it is provided that if elected at large the directors shall nevertheless be elected to represent separate divisions, of which they shall be residents. It is to be noted that section 26, which has not been changed, specifies that a director shall be a resident and freeholder of the irrigation district but not necessarily of the division for which elected. It is also to be noted that in practice, directors of all present California irrigation districts are residents of their respective divisions.

Two innovations, so far as concerns irrigation districts, that may be classed with sections dealing with elections were adopted by the California legislature in 1909 and 1911 (extra session)—nomination by petition, and the recall. Prior to 1909 the law made no provisions for nominations, but specified in section 22 that the provisions of the general election laws should not apply to irrigation district elections. Sections 22*a* and 22*b* were added in 1909,[4] specifying that ballots be provided with the names of candidates and that nominations can be made by petition of ten or more electors. At the extra session of 1911[5] section 28½ was added providing for the recall of any elective officer at any time. Under this amendment a number of recall elections have been held in Modesto and Turlock districts, and one has been held in Oakdale district, but only in two instances has such an election been successful.

[1]Statutes 1909, chapter 692.
[2]Statutes 1915, chapter 677.
[3]Statutes 1915, chapter 696.
[4]Statutes 1909, chapter 692.
[5]Statutes 1911 (extra session), chapter 34, p. 135.

EXCLUSION OF LANDS.

By an amendment to section 78 of the act of 1897 adopted in 1905[1] a former provision that no lands within city or town limits and no lands subdivided therefor should be excluded from irrigation districts was eliminated. A further amendment to the same section in 1913[2] provided that lands irrigated by underground pumped waters and benefited by subirrigation from district irrigation or drainage works can not claim exclusion, but that they shall be assessable only for interest and principal of bonds if thus irrigated at the time of organization and still exclusively so irrigated each year. This amendment was passed to meet a situation in South San Joaquin district where the court of appeals had held that a certain landowner having a pumping plant was entitled to have his land excluded.[3] A third, relatively unimportant, amendment to the same section was adopted in 1915.[4]

INCLUSION OF LANDS.

The provisions of the act of 1897 relating to inclusion of lands received their first amendment in 1915.[5] A series of provisos was added to section 90 permitting adjacent public land to be included without a petition and specifying that where the inclusion of land would injure land already in a district by the impairment of its water right or by increasing the expense of water, a priority of water right for the lands already in or additional annual payments or other just consideration from the lands to be included may be prescribed as conditions to inclusion. Section 91 was amended to require petitioners for inclusion to furnish an undertaking conditional on the failure of the inclusion elections.

SALARY OF DIRECTORS.

The act of 1897 allowed directors three dollars per day for time employed in district business. An amendment in 1909[6] substituted four dollars per day and an allowance of ten cents per mile traveled from the residences of the directors to the office of the board. A further amendment in 1915[7] adds a proviso that in irrigation districts containing 500,000 acres or more, directors shall, in lieu of a per diem allowance, each receive $150.00 per month. This amendment was added at the instance of Imperial district which at present is the only one to which it can refer.

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[1]Statutes 1905, chapter XXXIII, p. 27.
[2]Statutes 1913, chapter 367, p. 781.
[3]*Harelson* vs. *South San Joaquin Irrigation District et al.*, 128 Pac. 1010.
[4]Statutes 1915, chapter 506.
[5]Statutes 1915, chapter 696.
[6]Statutes 1909, chapter 692.
[7]Statutes 1915, chapter 696.

LEASE OF PROPERTY.

A statute passed in 1901[1] added section 15½ to the act of 1897, providing that boards of directors may lease the canal system of a district. This amendment was made at the instance of those seeking to take over the canal of the old Central irrigation district in Sacramento Valley. This section was amended in 1911[2] to extend the authority for lease of a system to any part thereof.

DISSOLUTION.

The original Wright act provided no means for the dissolution of irrigation districts and when an effort was made to dissolve Selma district shortly after its formation, the superior court of Fresno County held that it had no jurisdiction because of the lack in the Wright act. This decision was affirmed by the supreme court in May, 1893, which held that the general power of the courts to decree a dissolution of irrigation districts was no greater than in the case of municipal corporations proper, which the courts had no power to dissolve for failure to accomplish the purpose of their organization.[3] A supplemental act covering disorganization was passed in 1893 and amended in 1897, but was not incorporated in the general act of 1897, although probably not repealed by it. The matter was, however, covered by a supplementary act in 1903,[4] and this act was amended in 1909,[5] 1911,[6] 1913,[7] and 1915.[8] An amendment to the main irrigation district act of 1897, which adds section 47½, makes a further slight change. Under the act as amended dissolution of a district may be proposed by a majority of the real property owners representing a majority in value thereof. The petition of these owners must set forth all indebtedness of the district other than that barred by law prior to filing, the estimated cost of the dissolution, all assets of the district, and the proposed proposition for settlement, if assented to by the creditors of the district, or if a provision is made for the payment of creditors not assenting. The question of dissolution is then referred to an election which requires a two-thirds affirmative vote to carry, after which it is in the hands of the court. Section 7 of the act provides that a corporation may be organized to acquire the assets and operate the irrigation system of a district proposing to dissolve. Under this act at least fifteen of the old Wright districts have been dissolved.

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[1]Statutes 1901, chapter CCLXIX, p. 815.
[2]Statutes 1911, chapter 317.
[3]*People* vs. *Selma Irrigation District*, 98 Cal. 206.
[4]Statutes 1903, Chapter V, p. 3.
[5]Statutes 1909, chapter 91, p. 139.
[6]Statutes 1911 (extra session), chapter 26, p. 118.
[7]Statutes 1913, chapter 39, p. 39.
[8]Statutes 1915, chapter 525.

ASSESSMENTS.

An act of 1909[1] permits boards of directors of irrigation districts to provide for the payment of assesments in two installments instead of one. It is specified in this act that assessments levied under section 34 of the act of 1897, providing for completion of works, shall not be affected. Otherwise, upon petition of a majority of the assessment payers in a district the board of directors may provide that assessments be paid in two installments instead of one. By another act[2], section 35 of the act of 1897, relating to the duties of the assessor, is amended to provide that improvements on any lands or town lots within an irrigation district shall be exempt from taxation for any of the purposes mentioned in the irrigation district act and the word "improvements" is defined to include trees, vines, alfalfa, all growing crops, and all buildings or structures, with the proviso that the exemption of improvements for taxation shall not apply in districts organized at the time of this amendment without the approval by a majority vote of the resident holders of title to lands within the district subject to taxation therein. Another statute of 1909[3] provides that in the annual levying of assessments sufficient shall be included to pay in full the amount of any contract or obligation of a district which shall have been reduced to judgment. A statute of 1911[4] amends section 39 of the act of 1897 by requiring that in the annual levying of assessments the boards of directors shall add sufficient to pay in full all sums due or that shall become due from the district before the time for levying the next annual assessment on account of rentals or charges for lands, water, or water rights acquired under lease or contract. Another statute in 1911[5] amends section 59 of the act of 1897, which relates to special assessments, by adding three provisos at the end thereof: (1) that four-fifths of the board of directors of a district may by resolution levy in any one year an assessment up to two per cent of the assessed valuation within the district, but not exceeding $75,000.00 without a special election; (2) that a vote must, however, be taken on such assessment on petition of 15 per cent of the qualified voters in the district voting at the last preceding general election in the district; and (3) that in case of an unexpected emergency by which the flow of water in the district canal is interrupted, an indebtedness may by a four-fifths vote of the board be incurred not exceeding $40,000.00 in any one year. A statute in 1913[6] further amends section 39, relating to the levying and collection of assessments, by providing among other things, that it shall be the duty of the district attorney of each county

[1]Statutes 1909, chapter 274, p. 415.
[2]Statutes 1909, chapter 303, p. 461.
[3]Statutes 1909, chapter 55, p. 46.
[4]Statutes 1911, chapter 317.
[5]Statutes 1911, chapter 588, p. 1111.
[6]Statutes 1913, chapter 60, p. 59.

in which the office of any irrigation district is located, to ascertain each year whether the duties relating to the levying and collection of assessments have been performed and on showing of neglect to so notify the board of supervisors or other officials required to perform such duties, and that on failure of the supervisors or other officials to perform the neglected duties the district attorney shall take such action in court as may be necessary to compel performance, provided that for the enforcement of the levying and collection of any assessment "hereafter required to be levied and collected" for the payment of any debt "hereafter incurred," the attorney general of the State shall take appropriate action on failure of the district attorney to do so. A further act in 1913[1] amends sections 41 and 43 by providing that the penalty on delinquent assessments shall be 10 per cent instead of 5 per cent of the amount thereof. A statute passed in 1909[2] amended section 47 by providing that redemptions of property sold for district taxes could be made within five years from the date of sale or at any time thereafter before a deed had been made and delivered, in place of the two-year period previously allowed; also that where property had been sold to the district it might be redeemed at any time before the district had disposed of it. A further amendment in 1915[3] provides that directors may direct the district collector not to sell property on a delinquent list, but in lieu thereof to sue the owners in the districts named for collection. A supplementary statute passed in 1913[4] amends section 3653 of the Political Code by providing that on request county assessors must furnish to irrigation districts copies of assessment rolls covering lands therein.

POWERS OF DIRECTORS.

Changes relating to powers of directors of irrigation districts have been made in 1911, 1913, and 1915. The amendment in 1911[5] permits districts to acquire and hold the stock of other corporations owning waters, canals, waterworks, franchises, concessions, or rights. The change made in 1913 was in the form of a constitutional amendment which was adopted by the people in November, 1914. It authorizes irrigation districts, "for the purpose of acquiring the control of any entire international water system necessary for its use and purposes, a part of which is situated in the United States, and a part thereof in a foreign country," to acquire the stock of any foreign corporation "which is the owner of, or which holds the title to the part of such system situated in a foreign country."[6] This amendment was adopted to enable

[1]Statutes 1913, chapter 578.
[2]Statutes 1909, chapter 284, p. 429.
[3]Statutes 1915, chapter 696.
[4]Statutes 1913, chapter 386, p. 814.
[5]Statutes 1911, chapter 317.
[6]Session Laws 1913, constitutional amendments and concurrent and joint resolutions, chapter 95.

Imperial irrigation district to acquire that portion of the irrigation system of the California Development Company that is situated in Mexico. The same purpose actuated two amendments to the district law adopted in 1915[1] adding section 61*b* and section 61*c*. The former permits directors of irrigation districts of over 500,000 acres to acquire by purchase or condemnation an irrigation system supplying lands therein and where a part of such system lies outside of the State, to exchange district bonds for all or a portion of the system or for interest in or stock of a corporation owning such system; the latter provides that where directors have exchanged or agreed to exchange district bonds for property rights as authorized in the previous section the court shall in any proceeding under its provisions determine the validity of all bonds issued or to be issued under contracts for such exchange.

MISCELLANEOUS SPECIAL AND SUPPLEMENTARY ACTS.

In addition to amendments to the act of 1897 a number of special and supplementary acts have been passed affecting the irrigation district law of the State.

Drainage.—A statute of 1907[2] provides that irrigation districts may provide for drainage under the same laws that permit them to finance and construct irrigation works. Under this act drainage works have been built by Modesto and Turlock districts and a beginning has been made in South San Joaquin district.

Power.—A statute of 1911[3] amended section 1410 of the Civil Code of California relating to rights to water which may be acquired by appropriation by providing that no water for power may be appropriated for more than twenty-five years except by a municipal corporation other than an irrigation or lighting district, or by an irrigation district when for subsidiary use within its own limits, etc. This act has, however, been superseded by the water commission act of 1913.[4]

Agricultural Expert.—A statute of 1913[5] authorizes boards of directors of irrigation districts to employ agricultural experts and assistants to supervise the construction of works, advise with farmers, and conduct experiments.

Water Districts.—An act known as the "California Irrigation Act,"[6] which seeks to provide a policy relating to storage, diversion, and use

[1]Statutes 1915, chapter 655.
[2]Statutes 1907, chapter 298, p. 569.
[3]Statutes 1911, chapter 407, p. 821.
[4]Statutes 1913, chapter 586.
[5]Statutes 1913, chapter 72, p. 75.
[6]Statutes 1915, chapter 621.

of water, in co-operation between the State and the United States or otherwise, authorizes irrigation districts to reorganize under such act. This legislation was passed primarily in the interests of what is known as the "Iron Canyon Project" in upper Sacramento Valley and was amended to permit irrigation districts to reorganize under it at the instance of some of those seeking to consolidate into a number of co-operating irrigation districts all of the irrigation systems taking water from Kings River.

Legislative Validation of Irrigation Districts.—Beginning in 1911 irrigation districts in California have adopted the practice of obtaining special legislative acts of validation. Such acts were passed affecting Turlock district,[1] Oakdale district,[2] Modesto district,[3] South San Joaquin district,[4] and Imperial district[5] in 1911; San Ysidro district in 1913[6]; and Anderson-Cottonwood district,[7] Oakdale district,[8] La Mesa, Lemon Grove, and Spring Valley district,[9] and Waterford district,[10] in 1915.

Flood Protection.—An emergency act passed in 1915[11] in the interest of Imperial district provided that districts having an area of more than 500,000 acres shall have authority to construct levees and protect the lands within such districts from damage resulting from floods. For that purpose directors of such districts are given authority to spend money jointly with other agencies or alone, and it is provided that when bonds for flood protection have been authorized but not sold, directors may borrow the amount of such bonds and repay the loan out of bond sales, and in addition may borrow in any one year up to $200,000.00 at interest not exceeding 7 per cent. Under this act Imperial district borrowed $200,000.00 in the spring of 1915 for co-operation with the federal government and for independent action in flood control.

Imperial District Bonds.—A special act of 1915[12] validated an Imperial district bond issue of $3,500,000.00, dated January 1, 1915. This act was intended to assist Imperial district in its negotiations for the purchase of the property of the California Development Company.

[1]Statutes 1911, chapter 95, p. 261.
[2]Statutes 1911, chapter 96, p. 262.
[3]Statutes 1911, chapter 97, p. 262.
[4]Statutes 1911, chapter 98, p. 262.
[5]Statutes 1911 (extra session), chapter 27, p. 119.
[6]Statutes 1913, chapter 21, p. 25.
[7]Statutes 1915, chapter 68.
[8]Statutes 1915, chapter 50.
[9]Statutes 1915, chapter 156.
[10]Statutes 1915, chapter 632.
[11]Statutes 1915, chapter 1.
[12]Statutes 1915, chapter 17.

Purchase of System by Imperial Irrigation District.—A special act of 1915[1] authorized Imperial irrigation district to condemn or purchase the system of the California Development Company in California and the stock of the Mexican corporation owning the portion of the system that lies in Mexico, and in this connection to exchange district bonds not exceeding in amount $3,000,000.00.

Constitutional Amendments.—The constitution of California has been amended six times since 1902 in the interest of irrigation districts, or in such manner as to affect irrigation districts, or a single district. Section 1¾ of article XIII, as approved November 4, 1902, exempts irrigation district bonds from taxation within California. Section 13½ of article XI, as approved November 6, 1906, permitted irrigation districts to make their bonds payable at any place within the United States designated in said bonds. This section was further amended November 3, 1914, to permit irrigation districts to make their bonds and the interest thereon payable "at any place or places within or outside of the United States, and in any money, domestic or foreign, designated in said bonds." Section 16½ of article XI, as approved November 5, 1912, permits California irrigation district bonds to be deposited as security for state, county, or municipal funds.

Section 13 of article XI, as approved November 3, 1914, permits the legislature to provide "for the supervision, regulation and conduct, in such manner as it may determine, of the affairs of irrigation districts * * *." Finally, section 31 of article IV, as approved November 3, 1914, provides "that irrigation districts for the purpose of acquiring the control of any entire international water system necessary for its use and purposes, a part of which is situated in the United States and a part thereof in a foreign country, may, in the manner authorized by law, acquire the stock of any foreign corporation, which is the owner of, or which holds the title to the part of such system situated in a foreign county,"—an amendment purely in the interest of Imperial irrigation district, and designed to permit it to acquire full control of the works of the California Development Company lying in Mexico.

[1]Statutes 1915, chapter 172.

STATUS OF CALIFORNIA DISTRICTS JULY 1, 1915.[1]

Altogether fifty-seven irrigation districts have been organized in California since the passage of the Wright act in 1887, of which nine have been formed since the passage of the act of 1897. Counting eight of the old districts—Browns Valley, Modesto, Turlock, Alta, Tulare, Little Rock Creek, Big Rock Creek, and Walnut—seventeen out of the fifty-seven are in existence and twelve are operating. Of the remaining five, Big Rock Creek district has just been revived, Anderson-Cottonwood, La Mesa, Lemon Grove and Spring Valley, and Imperial, although fully organized and although they have all voted bonds, have not yet become operating districts, and Waterford and Alpaugh have not yet adopted plans or voted bonds.

In the following pages a somewhat detailed account is given of the status of the sixteen present active[2] districts, with emphasis laid rather on management than on works. That the people of the best California irrigation districts are developing a reasonable efficiency in handling their district business problems there can be no question; yet it is by no means certain that a higher efficiency would not result from a larger centralization of administrative authority. Only in the case of Imperial district has a high salaried general manager been employed, and even in that instance business questions seem largely to be retained within the jurisdiction of the directors. Further, this district is not yet fully operating. That it is proposed in Imperial district to have the directors retain a considerable administrative jurisdiction is evidenced by the passage in 1915, at the instance of Imperial district, of an amendment to the irrigation district law[3] by which directors in districts containing over 500,000 acres shall receive salaries of $150.00 per month in lieu of $4.00 per day received previously. In Modesto, Turlock, Oakdale, and South San Joaquin districts, as will be seen, the directors have been accustomed to devote much more time to district business than boards of directors of most commercial and industrial enterprises devote to those enterprises. It would seem, however, that even in these districts sentiment will gradually crystallize in favor of giving more

[1] Since this was written West Side, Terra Bella, Lindsay-Strathmore, Carmichael, and South Lassen irrigation districts have been formed, the latter without investigation and report by the State Engineer. The locations and areas of these four districts are as follows, according to records filed with the State Department of Engineering: West Side, near Tracy, area 11,500 acres; Terra Bella, surrounding Terra Bella, area 12,500 acres; Lindsay-Strathmore, east of Lindsay and Strathmore, area 18,000 acres; Carmichael, near Fair Oaks, area 1,306.52 acres; South Lassen, near Doyle, area approximately 22,000 acres. The formation of additional districts is, or recently has been, under consideration at Paradise, Thermalito, Oroville, Willows, Princeton, Ione, Morgan Hill, Merced, Madera, Stratton, and Cardiff, San Diego County.

[2] The term "active" is used here to designate districts that are actually active in construction or operation; or that have been only recently organized and are now in the preliminary stages looking to real activity.

[3] Statutes 1915, chapter 696.

PLATE III.

Sketch map of California showing location of active or recently organized California irrigation districts February 1, 1916.

and more administrative authority to the principal operating officer, whether that officer be styled a general manager or an engineer and superintendent. The logical ultimate development would seem to be to an able and well-paid manager to whom all employees, from attorney to ditchtenders, shall report, and with whom the directors shall advise and to whom they shall look for that efficient business administration which most irrigation districts have in the past lacked.

California irrigation districts have not wanted for their full share of internal friction, yet the history of such districts as Modesto and Turlock shows that this is decreasing as the people become more accustomed to irrigation farming and more experienced in co-operation and local self-government. A fundamental of good irrigation district government is a consciousness on the part of the people of the district of a community interest and of individual community responsibility. In the more important of the successful California irrigation districts such consciousness has been quite well developed, but the efforts it has stimulated have not always been constructive. One of the problems of irrigation districts, therefore, is to stimulate a constructive rather than a merely scolding interest on the part of the irrigators.

The financial management of California irrigation districts has not been free from difficulties and under the earlier law, as has been shown, those difficulties were not always met squarely. From the refunding act of 1897 down to the amendments of 1915, however, California irrigation districts and those interested in them have been endeavoring, usually with sincerity, to simplify and make more businesslike irrigation district financial operations. The development of the changes in the financial provisions of the district law is shown under a former heading (p. 48), but in reading of the present status of the districts now active some attention to financial affairs, especially the levying and collection of district taxes, is believed to be worth while. No mention is made of the extent of delinquencies in the payment of district taxes, although that matter was inquired into. In the well established districts delinquencies are negligible and are much more than cared for by the extra levy permitted by the district law. In one or two of the newer districts and in the old districts recently reorganized delinquencies have been large enough to constitute a distinct annoyance if not a problem; yet there is no evidence that if a problem is involved, it will not be worked out satisfactorily, or even that it is of sufficient importance to jeopardize the success of the enterprise affected. In no case has one of the fully reorganized districts or one of the new and already established districts failed in meeting bond interest, or bond principal when due.

The law requires that property shall be assessed for district purposes at its full cash value. It is realized that assessments for both special

and general taxes levied by counties and municipalities are bound to vary, no matter for what purpose they are levied. Therefore, it is not unexpected or surprising to find similar differences in the valuations placed on land of the same general character in irrigation districts. In irrigation districts, however, quite different methods in reaching valuations are followed, and it is to these methods that it has been deemed worth while to call attention in discussing conditions in the various districts now active.

Whenever the necessary data could be readily obtained operating expenses have been given and water delivery methods described quite fully. These are matters of every-day, practical interest to operating officials, which is the justification for including them.

ANDERSON-COTTONWOOD.

The historical data covering early operations under the Wright act already given disclosed the fact that of seven districts formed under that act in Sacramento Valley from 1887 to 1891, only Browns Valley district is now active, and with even that district only partially operating under the district law. It is, therefore, especially interesting that an important section of Sacramento Valley should now have turned to the district form of organization as a means of furnishing much needed irrigation water.

Anderson-Cottonwood irrigation district, extending along Sacramento River from Redding to below Cottonwood Creek, was organized July 14, 1914, by a vote of 512 to 17. While mostly lying west of the Sacramento, a narrow strip of land across the Sacramento connects the main portion of the district with about 3,800 acres east of the Sacramento on Churn Creek bottoms and Stillwater plains. The total area in the district, as voted, was approximately 32,500 acres, but several holdings have since been excluded and the exclusion of several others has been asked for and was under consideration by the directors in July, 1915. Generally speaking, the land embraced consists of first and second bottom river lands, first bench, and rolling plains. More technically, the lower lands are mostly classified by the bureau of soils[1] as Sacramento silt loam, Sacramento fine sandy loam, Anderson fine sandy loam, and Sacramento loam; the next higher mostly as Anderson gravelly loam; and the higher or plains areas chiefly as Redding loam and Redding gravelly loam. Although some of the plains land has been dry-farmed to grain and a little is still so farmed under summer-fallowing, agricultural production has mainly been confined to the two lower soils and to the largest extent to the bottoms. On the latter a

[1]United States Department Agriculture, Bureau of Soils. Soil Survey of the Redding Area, California.

considerable development in alfalfa and in deciduous fruits has occurred, with very little land irrigated. With water supplied as now proposed by the new district, and carefully used so as to avoid overwetting of the lower areas, production should be very appreciably increased on the fruit, alfalfa, and grain lands now under crop, and some of the higher lands now chiefly of value only for grazing should be given a substantial value for irrigation farming. The depth and composition of the higher lands both vary, and some of these lands are not likely to be very productive, although some seem well suited to certain types of orchard culture which an irrigation supply will make possible.

The irrigation system planned by Anderson-Cottonwood district, and on the basis of which bonds to the amount of $480,000.00[1] were carried June 18, 1915, by a vote of 503 to 94, calls for a main canal from Redding to the south side of Cottonwood Creek in northern Tehama County, a total distance approximating 30 miles. Water is to be diverted, during low water stages, by a concrete flash-board dam 500 feet long at the head of the old "Wheel" ditch shortly above Redding. From that point the main part of the system is to consist, in the order given, of a concrete-lined tunnel 2,480 feet long and 10 feet in diameter under a part of the town of Redding; an open channel 4,000 feet long to a weir near Sacramento River to be so constructed as to provide for winter drainage and the flushing of the canal above; a branch leading across the Sacramento, called "Churn Creek main," and involving a concrete and cast-iron siphon under the Sacramento; a main open canal from the above mentioned weir to the crossing of Cottonwood Creek; a concrete siphon under Cottonwood Creek; and an open canal from there to the end. The Churn Creek main, according to the plans, is to have four principal laterals, and the main canal on the west side a total of twenty. A pumping plant to cost with laterals $46,290.00 is planned for lifting water from the Churn Creek branch 38 feet to the small area on Stillwater plains that lies in the district. Three other pumping plants, estimated to cost a total of $8,520.00, will be necessary to raise water not exceeding 20 feet to small areas in the district lying above the west side main. The duty of water figured by the engineer of the district is one cubic foot per second for each 100 acres irrigated and the main canal is designed to carry at its head at least 365 cubic feet per second. Pumping plants are designed to deliver three acre-feet per season over the areas served by them and all laterals, except two to carry 50 cubic feet per second each, are designed for 32 cubic feet per second. The acre-cost of pumping has been estimated to be not to exceed $2.70 in the case

[1] The estimates of the engineers employed by the district called for an expenditure of $359,950, but the amount necessary was raised by the State Engineer to the amount voted.

of the plant on Churn Creek bottoms, and not to exceed $2.05 in the case of the others. The estimated acre-cost for operation, including maintenance, interest, replacement, and distribution, is $1.20, counting on the full area of 32,500 acres within original boundaries.

It is, of course, not possible to forecast the success of Anderson-Cottonwood irrigation district any more than of any other undertaking of similar character. That the enterprise is justified there can, however, be no question. The engineering problems involved are admittedly not serious and the engineering plans adopted have, with some modification as to costs, been approved by the State Department of Engineering. Assuming that the slight opposition that has been voiced will not develop into obstruction, that the federal government will interpose no objection to the proposed diversion from Sacramento River, and that the bonds that have been voted can be economically disposed of and the proposed works completed, the enterprise will still have before it the problems always attending the changing of the agriculture of a community from a dry to an irrigation basis. Most of the land holdings are now too large to be farmed economically under irrigation, so that as a rule they must be cut up as soon as water is available and annual water charges levied. With few exceptions the present landowners are untrained either in irrigation practice or in irrigation farming, and their first task will be to learn to irrigate and to grow and dispose of the crops that are best adapted to the soils and the situations of the district, and that will be profitable. Some difficulties will be encountered in distributing irrigation water over uneven surfaces and restraint will be needed to prevent washing of the steeper lands and overwetting of the bottoms, especially where there are depressions. The large flow of Sacramento River at the proposed point of diversion will insure an ample water supply and this will so tend to encourage over-use that a strict system of measuring water to irrigators and of at least partially basing the annual water charge on the quantity used seems essential. At this writing a difficult administrative problem before the district is that of levying district assessments. The nonproductivity of the plains lands without irrigation and the local belief that these lands will undergo a greater relative increase in value under irrigation than the already productive bottoms has convinced the owners of the bottoms that they should not be taxed a greater amount for construction expenses than the owners of the plains lands. The 1914 county assessment of the plains lands was generally about $7.00 per acre, while that of the bottoms reached as high as $40.00. Under these conditions the important practical question before the assessor became: Is it possible, under the provision of the law requiring all lands to be assessed at their full cash value, to assess the plains and bottoms at the same figure? An equal

assessment seems to have been agreed on by the landowners as being desirable, but a feasible adjustment of the matter had not yet been worked out when the district was visited in July, 1915.

BROWNS VALLEY.

The present status of this district is partially given in connection with its history. Browns Valley is not a "valley," strictly speaking, but rather a series of low rolling hills and valleys. The hills are higher and the valley depressions consequently more pronounced as the Sierra are approached on the east, while on the west the lands grade off to lower rolling plains. It is this unevenness in topography that limits the area in the district susceptible of gravity irrigation from the system. Except on the west, which is barren, the hills are covered with scrub oak and pine, with in some places a rather dense undergrowth of brush. The crops grown include a limited amount of alfalfa, small fruits, some deciduous and citrus fruits, and olives, and there is a considerable acreage of wild meadows, which, with the alfalfa, make dairying rather prominent. The original crib dam at the head of the canal has been replaced by a concrete structure and from there to the power house at Colgate the canal capacity has been increased, for power purposes, to about 700 cubic feet per second, the cost of this having been met by the power company with which the district has an agreement. From Colgate to the lower power house along Dry Creek the capacity is said to be about 50 to 70 cubic feet per second. In July, 1915, the power company reported to the district the carrying of 1,600 inches, or 40 cubic feet per second, about 40 miles above. The district has in all about 100 miles of main canals and laterals.

Having, under its agreement with the Pacific Gas and Electric Company, only to care for water delivery and maintenance of the laterals, the operating expenses of the district are not high. The amount due to the district under its contract with the Pacific Gas and Electric Company is uncertain, but is believed by some of the officers of the district not to exceed 1,800 or 2,000 inches. In 1915 about 1,200 inches is being received, all of which is used. Water is sold to the irrigators at the rate of $3.00 per miner's inch per season, measured under a 6-inch pressure at each point of delivery, 75 inches being about a maximum "head," and each irrigator running water continuously during the irrigation season, which in dry years may extend from March to November. During the winter season stock water is kept in the ditches. No record is kept of the amount of land irrigated, nor is the exact duty of water under the system known. From such general observations as were made it was concluded that the area receiving water in 1915 does not exceed 2,500 acres. A feeling is growing in the district that a more careful

use of water and a rotation system of delivery must be put into effect in order to care for the increasing demand for water. About one-half of the land in the district is estimated by the president of the district to be held by owners who are now using no water; and even the owners who are irrigating are applying water to only about one-tenth of their holdings. As under the district law all have equal rights to the water controlled by the district, an additional supply must be obtained as more desire to irrigate, or the district must attempt the impossible task of making under 2,000 inches of water meet the needs of the irrigable portions of nearly 45,000 acres of land. At present there are 104 irrigators, of which five or six use as little water as one miner's inch.

The organization of Browns Valley district consists of a board of three directors elected at large, an assessor-collector, and two ditchtenders, one of the directors also acting as secretary, but receiving no compensation other than the $4.00 per diem allowed directors for each meeting of the board. The salary of the assessor-collector is $30.00 per annum. One of the ditchtenders acts as superintendent and receives $90.00 per month, with a reduced rate during the winter; the other ditchtender receiving $75.00 per month during the running of water. Neither ditchtender is furnished transportation by the district. The plan of not levying any assessments is still followed, all expenses being met by the water tolls. The directors of Browns Valley district, as in most other cases, are not entirely free from local troubles in the management of the district's business and the distribution of its water supply. There have recently been two small cases of litigation, one seeking to enjoin a water user from taking water without permission, and the other involving damages alleged to have been suffered to crops through failure by the district to deliver water. Both suits were decided wholly in favor of the district. A few have failed to pay water tolls and suits to collect are contemplated. On the whole, however, the affairs of the district run smoothly and an agriculture more satisfactory than that of earlier years, with its foundation in dairying and stock raising, is gradually developing.

SOUTH SAN JOAQUIN.

Thirty years ago agricultural conditions had reached that stage in certain portions of the northern part of San Joaquin Valley that further substantial progress was impossible without irrigation, even if there should not be a backward movement if nothing were done to change matters. The critical stage had been reached in the balance between profits from farming with water and without it. In the areas centering around Modesto there was no doubt that farms must either grow larger and be more extensively worked, or grow smaller and be farmed under

PLATE IV.

Fig. 1.—Irrigated Rolling Meadow in Browns Valley Irrigation District.

Fig. 2.—Main Supply Ditch of Browns Valley Irrigation District.

the intensive culture water would make possible. It was out of these conditions, as has previously been stated, that the Wright act of 1887 grew, and that this act was suited to these conditions, even if the act itself was incomplete, has been proven by the success of the two large districts formed at Modesto and Turlock. It was therefore not unnatural that the neighboring communities about Oakdale, Ripon, Manteca and Escalon should also eventually come to the district form of organization for irrigation development.

South San Joaquin irrigation district, lying wholly in San Joaquin County, was organized May 11, 1909, by a vote of 376 to 87. Previous efforts to obtain water date back to about 1889, when the San Joaquin Land and Water Company was formed to divert water from Stanislaus River.[1] After passing through many difficulties and later reorganization into the Stanislaus and San Joaquin Water Company, and again after passing into the hands of the South San Joaquin Canal and Irrigation Company and the Consolidated Stanislaus Water and Power Company, this enterprise that had been started in 1889 passed into the hands of a receiver and was sold at auction for a small fraction of the amount of money that had been invested in it, and by 1908 it was delivering water to several thousand acres. At that time, however, it was apparent that the old system must be enlarged and reconstructed and its owners, known as the Tulloch interests, began a canvass for the sale of additional water rights at $20.00 per acre. Like many water-right contracts, the contract offered to the farmers by the Tulloch system was not looked upon favorably, and the feeling gradually developed that if the farmers were to pay for building a new system they should own that system themselves. Meetings to discuss the situation were held at Manteca, Ripon, and elsewhere, and out of these meetings an irrigation bureau was formed by representative landowners in southern San Joaquin County for the avowed purpose of promoting the formation of an irrigation district. This irrigation bureau went about its work very effectively. Several hundred dollars was subscribed by the members and a newspaper, known as the "Irrigation Bulletin," was started to further the campaign. For about a year this publication, largely supported by its advertising pages, kept the matter of the proposed irrigation district constantly before the landowners in the area affected and the commercial and financial interests of the city of Stockton, and it was under the direction of the irrigation bureau that the lines of South San Joaquin irrigation district were laid out and organization of the district finally consummated.

[1]Previous to this, however, and as early as about 1864, the property taken over by the San Joaquin Land and Water Company, or a portion of it, was owned by the San Joaquin County Water Company, but divested of title by foreclosure, after which the property came into the hands of one Abraham Schell.

From the beginning South San Joaquin irrigation district seems to have been fortunate in the selection of its officers, for, in spite of some mistakes that are acknowledged, it is doubtful if more efficiency and force have been put into the organization of any other irrigation district in the State, nor has any district been more loyally supported by the landowners. As soon as the district was organized an experienced and competent engineer was employed to lay out the proposed system, and on May 12, 1910, after a very thorough engineering study, an assessment of $35,000.00 was levied by a vote of 292 to 70, to pay for engineering expenses. The first bond issue, amounting to $1,875,000.00 and dated July 1, 1910, was authorized by a vote of 329 to 67. Of this issue $325,000.00 in bonds was used for the purchase of one-half interest in the old Tulloch system, and contracts were let jointly with Oakdale irrigation district for the construction of a diverting dam in Stanislaus River, and also, independently, for the construction of the canal system to the district. Through inability of the district to dispose of its bonds in the open market and the consequent necessity for letting its contracts only to those who would agree to buy sufficient of the bonds to pay for these contracts, the original bond issue proved only sufficient for constructing the works down to the district line, so that a further issue became necessary if the district was to construct the distribution system within the district. Accordingly, an election was held January 25, 1913, at which were submitted two propositions: One for the issuance of bonds amounting to $1,170,000.00 for construction and completion of the main distributory canal within the district and for laterals and drainage ditches, the distribution system to extend to each 40-acre tract within the district; the other for the issuance of bonds amounting to $790,000.00 for the construction of a foothill reservoir and other storage facilities. There was much discussion in the district prior to this bond election as to the desirability of completing the distributing system of the district to each 40-acre tract, which was something no other irrigation district in the State had done. The proposition to do this was, however, submitted and carried by a vote of 492 to 24, the proposal to issue bonds for reservoir construction carrying by 432 to 83.

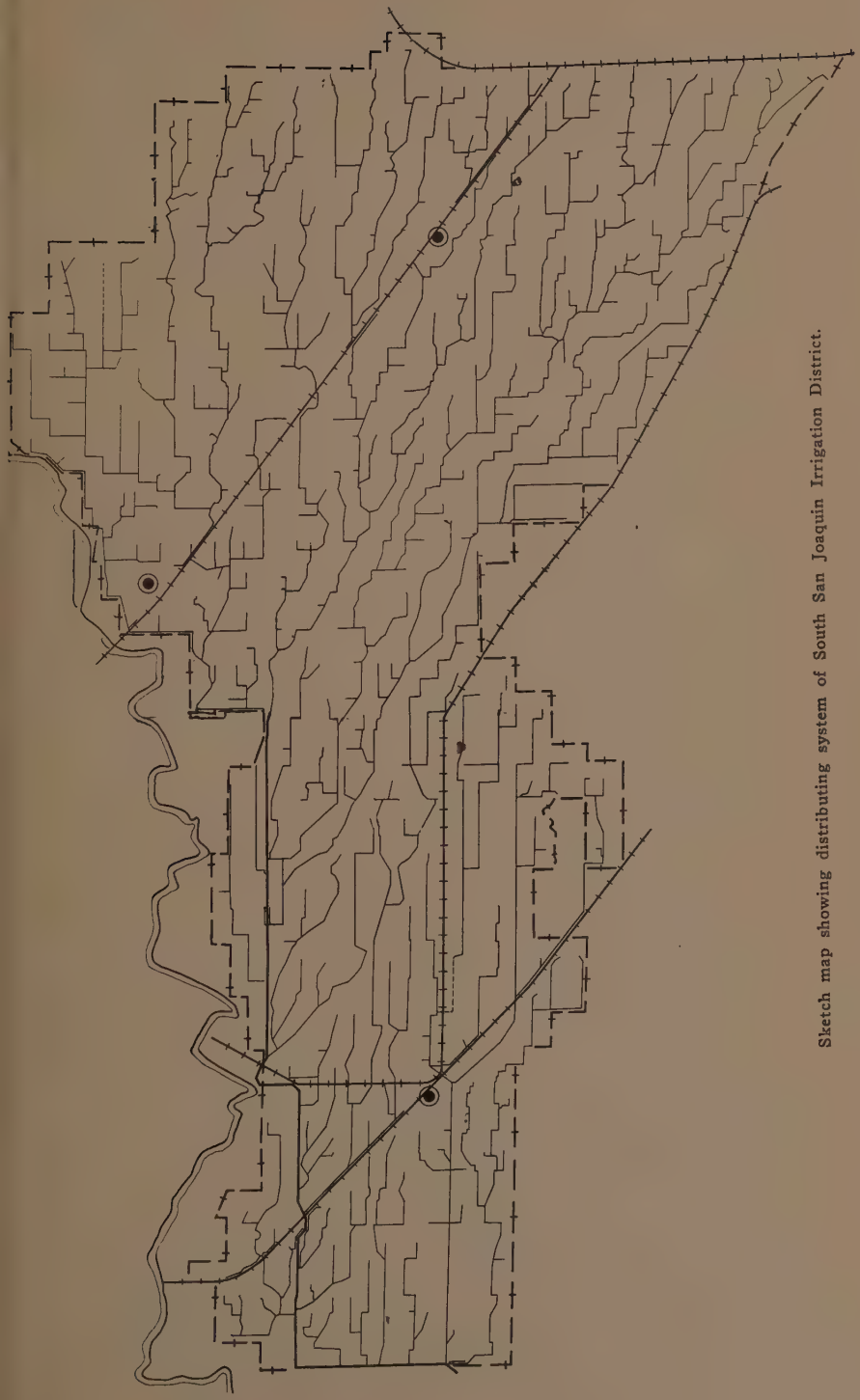
After the early difficulty experienced by the district in disposing of its bonds except through contractors, the estimates of the engineer of the district covering construction of the distribution system and of the proposed storage were based on selling the bonds at a figure considerably below par. There was still some difficulty, however, in obtaining contracts within the estimates, and it was necessary to levy a special assessment of $140,000.00 in 1914 to complete the work. So determined were the people of the district that the system should be completed as planned, that when the matter was laid tentatively before them, they

PLATE V.

Fig. 1.—Goodwin Dam of Oakdale and South San Joaquin Irrigation Districts at low water stage.

Fig. 2.—Headworks of South San Joaquin Irrigation District Canal and portion of Goodwin Dam.

PLATE VI.



Sketch map showing distributing system of South San Joaquin Irrigation District.

t only consented to this assessment, but pledged themselves to the nount of over $20,000.00 pending the calling of the special election, order that the construction work should go on without delay. Rights way were given without cost to the district for all laterals within the strict and the distribution system was carried to completion by the rly summer of 1914, when the delivery of water began, the upper orks having been formally opened April 6th of the previous year.[1]

Although bonds for reservoir construction were voted by South San oaquin district in 1913, only a small portion of these have thus far en used. Land in the proposed foothill reservoir site has been purased at a cost of about $87,000.00 and the matter of going ahead with nstruction is now under consideration. The estimates for completing e distributing system for which $1,170,000.00 was voted along with e reservoir issue included an item of about $85,000.00 for drainage, it this has not yet been constructed. Certain portions of the district re in need of drainage but a complete plan of drainage has not yet een worked out or adopted. The first step contemplated is the conruction of an intersecting ditch line along the western boundary of the istrict to receive waste from the lateral system and also to carry away rplus ground waters in that section.

Counting the three bond issues thus far authorized the total indebtedess in South San Joaquin district is $54.75 per acre, which is the ighest cost of any of the California irrigation districts. It must be orne in mind, however, that this cost includes a distributing system to ach 40 acres of land within the district (Plate VI), and also a subtantial appropriation for storage. It yet remains to be seen whether e complete construction of the distribution system will work out to e advantage of the district, although no one has seriously questioned e judgment of the directors and the people of the district in incurring is expense in advance of closer settlement. Three principal considrations actuated the construction of the distribution system, namely: he probable reduced cost to the community if the laterals should be onstructed at one time under a single distribution; the saving in cost f rights of way, these all having been granted free to the district; and he desirability of making water immediately available to each subivision in the district to the end that settlement might be rapid. It as been the history of the neighboring districts that development of onsiderable areas has been held back by distance to the main disribution system. While this condition is not of great importance where he acre cost of the irrigation system is low, the question of making vater available to each tract at once is a matter of much importance

[1]For description of South San Joaquin irrigation district, including works, soils, nd finances, *see* report of Irrigation District Bond Commission of California, dated Iay 13 and September 17, 1913, published by the district.

where the cost per acre is as high as in South San Joaquin district. Unfortunately, South San Joaquin irrigation district is most in need of settlers in the period of western development when settlers are scarce. A considerable proportion of the district has been laid out in subdivisions, but these have not yet in large measure been sold. Nevertheless, there are relatively few large holdings in the district, and due to the general rise of ground water and the resulting subirrigation of some of the land, much of the district that is not yet surface irrigated is successfully growing such annual crops as sunflowers, sorghums, sugar beets, and melons, and all of these are returning a higher profit than the former dry-grain farming. Thus the growth of these crops on subirrigated land has changed a condition which might have been considered a serious one to one which is generally considered entirely hopeful. During the season of 1914 application was made to the district for water for 15,600 acres. Preliminary figures available in September, 1915, indicate that approximately 22,000 acres has been irrigated during this season, of which 10,928 acres is in alfalfa, 1,123 acres in trees, 3,136 acres in vines, 1,547 acres in sunflowers, 1,322 acres in beans, 2,909 acres in corn, and 1,224 acres in truck.

Of the 70,050 acres in the district, 70,000 acres was under cultivation when the district was formed, and only 250 acres was classed as untillable. The estimated population of the district in 1915 is 3,500 and the total 1915 valuation assessed for district purposes is $5,478,594.30. The amounts raised annually by assessment have increased from $67,129.69 in 1910 to $372,531.95 in 1914. The irrigation district tax rate per $100.00 valuation has increased from $2.35 in 1910 to $4.85 in 1915. With the exception of between 3,000 and 4,000 acres situated too high to receive water from the system by gravity, which is assessed at $15.00 per acre, the district valuations range from $105.00 down to $80.00 per acre. A zone system, with the towns of Manteca, Ripon, and Escalon as centers, is followed in arriving at valuations. Town lands are valued somewhat arbitrarily, but in general at about one-third of their market value, acreage property within the towns being assessed at $105.00 per acre. In arranging the zones, four squares are described around the towns at distances of one-fourth mile, one-fourth mile, one-half mile, and one-half mile, respectively, from the outside limits of the towns, and the valuations within these four zones range from $100.00 down to $85.00 per acre. All land outside of the last zone and in excess of one and one-half miles from the town limits is valued at $80.00 per acre. While the cost of water in South San Joaquin district is high as compared with other irrigation districts in the State, it is not greater than under some of the other projects, and the general fertility of the soil of the district and the proximity to several main lines of transportation

would seem to make the annual charge a somewhat less burden than the same charge would be in a less favorably situated section.

The directors of South San Joaquin district follow the practice of devoting much attention to the management of the district business, each member of the board having served an average of seventeen days per month during the past six months. While this excessive amount of time is partly due to the fact that some of the members have but recently been elected, nevertheless it seems to be the policy of the board to devote much time to details, rather than to leave these details to the trained engineer employed.

OAKDALE.

The area watered by the old Tulloch system mentioned above in connection with South San Joaquin irrigation district included land around Oakdale, and when South San Joaquin district was successfully organized the people about Oakdale concluded that if nothing were done by them to increase their irrigated area they would be in danger of losing to the South San Joaquin sections water rights still available in Stanislaus River. Thus stimulated, the community was not long in organizing, and within six months from the time the matter was first given publicity, namely, on October 23, 1909, the organization of the Oakdale district was authorized by a vote of 348 to 27. Within a short time thereafter engineers were in the field and a system was laid out calling for the expenditure of $1,600,000.00. A contract was then entered into with the Tulloch interests to purchase those interests for $650,000.00 in bonds, with an agreement that South San Joaquin district should participate in the contract on equal terms with Oakdale. The bond issue of $1,600,000.00 recommended by the engineers was approved by the electors on February 26, 1910, by a vote of 339 to 9. In conjunction with South San Joaquin district the contract with the Tulloch interests was then closed, each district paying $325,000.00 in bonds for a one-half interest in the system, including water rights. The plan of works decided upon was soon adopted, but for nearly two years the district failed to dispose of its bonds, although one bid was accepted and a contract let for a portion of the work, both of which it was later found necessary to cancel. On January 4, 1912, however, contracts were let for the construction of the system, arrangements having been made by the contractors to purchase the bonds of the district at par, as needed. Oakdale district experienced the same difficulty that was experienced in South San Joaquin district in building its works within the estimates of the engineers, on account of the extra price needed to be paid for work under conditions that required the contractors to find purchasers for

the bonds. Because of this and other reasons, additional bond issues became necessary, and $400,000.00 were authorized by a vote of 322 to 40 on December 27, 1912, and an additional $400,000.00 by vote of 492 to 129 on October 5, 1914. Construction work under the last issue is now under way and chiefly consists of extensions to laterals, structures, concrete lining, the elimination of a bad section of canal by the construction of a tunnel estimated to cost $50,000.00, pipes and siphons, and culverts and bridges. The last bond issue of $400,000.00, which bears 6 per cent interest, was disposed of for cash at 90.25, the bidder agreeing to supply the money at stated intervals. The work under all of the bond issues was approved by the state bonding commission, and it is expected that the physical properties of the district will be in excellent shape after the completion of the works now under way. No bonds, however, have yet been voted for storage, nor have definite storage plans yet been adopted. Filings have been made jointly with South San Joaquin irrigation district and the Utica Mining Company for a reservoir at Spicer Meadows in the mountains above Oakdale. There have also been some negotiations regarding storage between Oakdale and South San Joaquin districts and the San Francisco and Sierra Power Company, which also has power interests on the Stanislaus.[1]

Including land irrigated under contracts taken over from the Tulloch system, Oakdale irrigation district irrigated a total of 11,217 acres in 1914, of which 5,017 acres was in alfalfa, 538 acres in garden, 1,109 acres in trees, 77 acres in berries, 132 acres in vines, 25 acres in beets, 1,698 acres in beans, 27 acres in melons, 1,882 acres in corn, 512 acres of new land being flooded for leveling, and 200 acres in rice. No definite unit has been fixed upon to which district laterals will be constructed, but the main and subsidiary laterals of the district are being extended to bring water within relatively easy access to landowners. The total area embraced in Oakdale district is 74,146 acres.

According to the assessment roll of 1914, there were in the district in that year forty-five holdings of 400 acres or over, and nine holdings exceeding 1,000 acres. On the other hand, there were many small units—112 of five acres each, 158 of ten acres each, 127 of twenty acres each, 45 of thirty acres each, 56 of forty acres each, and 22 of fifty acres each. Approximately forty-five subdivisions have been laid out in which the prevailing unit is forty acres, but these have not yet been largely sold. The largest development thus far is in what are locally known as the bench lands lying between Oakdale and the eastern

[1] For a general description of Oakdale irrigation district, including soils, works, financial conditions, etc., see report on Oakdale irrigation district by the State Irrigation District Bond Commission, dated June 25, 1914, and published by the California State Printing Office.

boundary of Modesto irrigation district. East and southeast of Oakdale the lands are more rolling in character, the district having quite irregular boundaries in order to take in the flat lands among the hills. On the north side of Stanislaus River east of Oakdale, and also in the neighborhood of Oakdale, there was a considerable development in fruit growing, chiefly including citrus fruits and almonds, prior to the formation of the district. In the bottom lands in the immediate vicinity of Oakdale, vegetable growing has been very successful. Water was first delivered through the new works of the district in 1914.

Valuations assessed for district purposes by Oakdale district have increased from $2,160,355.00 in 1910, to $3,342,140.00 in 1914. The district tax rate in 1910 was $2.62 on each $100.00 of valuation, and it has recently been fixed at $5.80 for 1915. Owing to the irregular character of the lands in Oakdale district, it was found impracticable to apply a zone system in making valuations. Acreage property in the town of Oakdale is assessed at $110.00 per acre; river bottom lands at $90.00 per acre; acreage property in towns other than Oakdale at $50.00 to $70.00 per acre; farm lands immediately surrounding Oakdale at $90.00 per acre, lands in the Orange Blossom citrus section at $60.00 per acre, the bench farming lands next below the rolling plains at about $60.00 per acre, and the rolling plains lands generally at $45.00 per acre. Some nonagricultural land along the river beds is assessed nominally and land above the ditch too high to receive water by gravity at $10.00 per acre.

The organization of Oakdale irrigation district has already had an appreciable effect in increasing population, in spite of the fact that as in South San Joaquin irrigation district and nearly all other irrigation projects in the west, settlement has been very slow during the past two years. The estimated population at the time the district was organized was 2,000, but this is now considered by the district assessors to have increased to 6,000. The first assessment roll of the district in 1910 had 703 assessment payers, but this had increased to 1,505 in 1915. As in the case of South San Joaquin district, Oakdale district receives some water well into the fall, due to the operation of power companies above Oakdale. While this supply will not be large until storage is provided by the districts, it is now sufficient to give late water to the crops most in need of it.

Internal affairs have not always run smoothly in Oakdale district, although there have been no greater internal difficulties than in most other new projects. When the third bond issue was found necessary, there was some dissatisfaction among certain of the people and an unsuccessful effort was made to recall the entire board of directors. Although they have employed a competent and experienced chief engineer and general manager, the members of the board of directors in

some cases still devote a considerable amount of time to the details of district management, a majority of the members spending about ten days per month each on the district business, and one usually spending from twenty to twenty-five days per month. The board keeps a standing field committee of three members, one of whom is changed each month.

WATERFORD.

Approximately 13,000 acres are included in this district, which adjoins Modesto irrigation district on the west, and Oakdale irrigation district on the north. The lands embraced are generally those lying between Dry Creek and Tuolumne River, and extending from the western boundary of Modesto district eastward to the Modesto irrigation district reservoir at Dallas Lake. Some of the bottom lands along Tuolumne River east of Dallas Lake, and some of the bench lands lying directly north of them, are also included.

Waterford district was organized by a vote of 70 to one on September 6, 1913, and steps were immediately taken to make necessary surveys and to outline a system of works. Both Tuolumne and Stanislaus rivers were considered as sources and the former determined upon. It was realized, however, that on account of prior appropriations on the river by Modesto and Turlock irrigation districts and by the city of San Francisco for a municipal supply, as well as by power companies, the chief dependence must be placed on storage. This it proposes to acquire through co-operation with Modesto and Turlock districts in the construction of the contemplated reservoir in Tuolumne River about six miles above La Grange dam. Water is now available to Waterford district without storage during the flood periods of the late spring and early summer, and the district is now seeking to acquire a right to divert water through Modesto canal by enlarging that canal down to the Waterford district lands. At one time it was proposed to petition Modesto irrigation district for the inclusion in that district of all the land of the Waterford district, but this plan has been abandoned. The best method of combining the works of the two districts and the proper cost to be borne by Waterford district have been under discussion for some months, but in order to reach a conclusion most easily, it is now proposed for Waterford district to bring suit for condemnation of a right of way through Modesto canal, as permitted by an amendment to the Code of Civil Procedure passed at the last session of the California legislature.[1] In connection with this condemnation suit it is proposed

[1]Statutes 1915, chapter 429. Among other things, this chapter amends section 1240 of the Code of Civil Procedure by providing that property appropriated to one public use by any irrigation district may be taken by another irrigation district for another public use for a purpose not inconsistent with existing purposes and use, this to include the right to enlarge, change, or improve the property to be taken.

to ask the State Railroad Commission to fix the price to be paid by Waterford district.

Land included in Waterford district is very similar to that in Oakdale district, and is really a continuation of it. For years the area included was a very satisfactory grain producing section, and most of the land in the district is now dry-cultivated for that crop. There are about 150 assessment payers in the district, about 6,000 acres out of the total 13,000 acres included, however, being the property of one individual. Final estimates of cost have not been made, but it is hoped to bring the cost per acre within $30.00, exclusive of reservoir construction. If there is no delay in the proceedings now under way, it is expected that some water will be available through Modesto canal during the high water period of 1916.

MODESTO.[1]

As detailed in the history of Modesto irrigation district, previously given, irrigation water first became available for general use in this district in the early spring of 1904. During that year Modesto canal carried a mean flow of 167 and a maximum flow of 278 cubic feet per second and supplied water to 6,895 acres. The maximum diversion during the season of 1915 has been 730 cubic feet per second and, according to estimates supplied to the superintendent of the district at the beginning of the irrigation season of 1915, the total area for which water applications were filed with the district for the season of 1915 was 51,915 acres.[2] In 1904 the number of assessment payers in the district was 1,053, the assessed valuation was $4,342,125.00, and the total irrigation district tax was $112,895.25. In 1914 the number of assessment payers had increased to 2,912, the assessed valuation to $6,961,245.00, and the total tax, which was even larger in 1911 and 1913, to $174,031.13. The bonded indebtedness of the district in 1904 was $1,388,511.00, or $17.10 for each of the 81,143 acres in the district. On December 31, 1914, the outstanding bonded indebtedness was $1,605,823.75, to which has since been added the fifth and sixth issues, dated July 1, 1914, amounting to $610,000.00, making a total of $2,215,823.75, or an average of $27.30 per acre. With the exception of the years 1907, 1911, and 1913, when extra large special assessments were levied for improvements, this increase has been accomplished with no addition to, and sometimes with even a slight reduction of, the irrigation district tax rate. During these eleven years the minimum tax rate has been

[1] For additional data on the present status of Modesto irrigation district, *see* report on this district by the Irrigation District Bond Commission of California, dated June 25, 1914. California State Printing Office, 1914.

[2] This area was distributed among the following crops: Alfalfa, 41,663 acres; trees, 2,867 acres; vines, 1,515 acres; beans, 1,815 acres; corn, 843 acres; grain, 3,076 acres; garden, 136 acres.

$2.30 and the maximum $3.75 per $100.00 of assessed valuation. For the past ten years the special assessments for betterments have ranged from $25,000.00 to $75,000.00 per annum, and have averaged about $40,000.00.

The succeeding account of the present status of Turlock irrigation district tells something of the difficulties that have arisen in the adjustment of the farmers of that district to the practice of irrigation. Conditions in Modesto district have been very similar, and the result in Modesto district, as in Turlock district, has finally been a better and broader outlook on the part of the farmers, and a definite tendency toward improved standards of management. How to improve and enlarge the district works, the amount of storage needed and how best to get it, the proper division of the district into electoral divisions in order to minimize what some considered undue control by the voters in the city of Modesto, methods and efficiency of water distribution, who should be the engineer and superintendent and what should be his authority, and the attitude the district should assume toward diversions from the Tuolumne River watershed by the city of San Francisco, have been among the problems that have caused controversy. Regardless of whether these matters have been rightly or wrongly settled, the district has made, and is making, a definite and commendable advance, and is now engaged in a type of permanent betterments that must stand as a credit to the community.

In 1904 there were 8,932 lineal feet of wooden flumes and thirteen large wooden structures on the main Modesto canal. When work now under way is completed all of the wooden flumes and most of the drops will have been eliminated and permanent construction substituted. This permanent construction, which began in 1904, and has been continued as means would permit each year since then, has also included, among other improvements, the rebuilding of part of the headgate at La Grange dam, a large amount of concrete lining near the upper works, hydraulic fills with concrete-lined channels at the upper and lower Dominici and the Morton gulch crossings, the construction of Dallas and Warner foothill reservoirs, at a cost to date of approximately $260,000.00, enlargement of a portion of the main canal above the reservoirs to a carrying capacity of 2,000 cubic feet per second, and a beginning on a drainage system in the district. Work now under way, which is being paid for from the proceeds of the fifth and sixth bond issues, bearing 6 per cent interest, of which $25,000.00 was sold at par to the State and $585,000.00 sold for cash through a bond broker at 90.6, includes construction of hydraulic fills with concrete-lined channels at Indian Hill, Gasburg, Rairdan, and Salter gulch crossings, a reinforced concrete flume and spillway at the Dry Creek crossing, completion of the recon-

PLATE VII.

Fig. 1.—Concrete-lined portion of Modesto Canal in foothills below La Grange.

Fig. 2.—Hydraulic fill with concrete-lined channel, Modesto Canal.

struction of the headgate at La Grange dam, and the construction of a concrete cutoff wall at the inner toe of the outlet dam at Dallas reservoir and the facing with concrete of dams Nos. 1 and 6 at the same reservoir. When this work is completed it is proposed to spend an additional $35,000.00 in adding to the main open drain system in the district, to line three or four miles of the main canal at dangerous points, to give the main canal a capacity of 2,000 cubic feet per second from La Grange dam to the reservoirs and a capacity of 1,200 cubic feet per second between the reservoirs and the district line, to build about fifty principal concrete headgates and checks within the district, to replace the four remaining wooden drops in the main canal with permanent concrete structures, and to build permanent wasteways at Waterford and at the lower Dominici fill. The engineer's estimate is that for the completion of the above work about $250,000.00 will be necessary in addition to the $610,000.00 in bonds comprising the fifth and sixth issues. There will then be left to build such additional drainage works as are found to be necessary and such additional reservoirs as it is decided to construct. Plans are now tentatively under way for the construction of a reservoir in the bed of Tuolumne River about six miles above La Grange dam in conjunction with Turlock district. It has recently been proposed to make an endeavor to get federal aid in the construction of this reservoir, it being claimed by the districts that, after having built up their communities entirely through their own efforts, they are now as much entitled to federal aid in reservoir construction as are different reclamation projects in which a very large proportion of the land benefited was in private ownership prior to government construction.

In common with other California irrigation districts, Modesto district has developed its own peculiar plan of levying district assessments. Improvements were exempted from district assessment on June 3, 1911, by vote of 487 to 403. Prior to that time a considerable portion of the total taxes raised came from improvements. Under present conditions the district assessor, in general, raises both farm and city property within the district about 50 per cent above the assessment for county purposes, except that the maximum appraisal per acre for farm land in the district is $90.00, this being the base for appraisal within one mile of the city of Modesto. Around the towns of Salida and Empire the base for appraisal purposes is $85.00. From these two bases of $90.00 and $85.00 assessments grade down to about 50 per cent above the county valuation. Vacant farming lands within the city of Modesto which are held for subdivisional purposes are appraised at from $150.00 to $200.00 per acre. An innovation in the assessment of business lands within the city of Modesto is the addition of about 25 per cent and possibly a little more on such property over the appraisal of town residence property.

The question of reducing the assessment on lands too far from the district canals to be served with water has never arisen in Modesto district because the district does not build the distributing laterals other than the main laterals. In some cases, however, the district has taken over private laterals built by others on condition that the irrigators served sign agreements to abide by the rules of the district. For this it has been necessary to employ additional ditchtenders who serve from three to ten days per run at a daily wage of $2.50. In this connection it might be added that the district is drifting toward the plan of complete district control and supervision of distribution, regardless of lateral owners.

The distribution of water in Modesto district is now under the control of a superintendent and sixteen ditchtenders, the latter receiving $70.00 to $80.00 per month with neither house nor means of conveyance furnished. On the main canal, ditchtenders are employed the year around, the others being employed during the irrigation season only, although they are used a portion of the nonirrigating season in general canal maintenance.

The usual irrigating head delivered in Modesto district is 20 cubic feet per second. When the district first started irrigation, methods of preparing land were exceedingly crude, the contour method with high and irregular levees being the most common practice. At present a majority of the irrigators use "gravity" or strip checks from 50 to 150 feet wide and up to one-fourth mile long, with the best practice confined to checks less than 75 feet wide and not over one-eighth mile long.

The directors of Modesto district still devote a good deal of their time to its management, holding regular meetings during construction periods about once per week, with committees of two or three directors devoting about an average of one day per week, in addition, to general supervision. At present the construction and operating force are entirely separate.

The amendment to the irrigation district act permitting the recall of elective officers in irrigation districts was passed at the instance of people living in Modesto district and recall elections have been resorted to on three occasions, in two of which they were successful. As indicating a more stable feature of the management of this district, however, the interesting fact is worth noting that the very efficient secretary of the district has been kept steadfastly and continuously at his post for the last twenty-four years.

The matter of redivisioning Modesto district in order to place the city of Modesto in a division entirely separated from the divisions embracing the farm lands at one time aroused considerable discussion and was finally carried out. The idea prompting the change

was that if embraced within a single electoral division, the voters in Modesto would not be able to control the board of directors as some had charged they had been able to do when the city extended into several of the divisions. The main argument advanced against the redivision was that about one-half of the population of the district resides within the city, and that having its representation upon the board of directors reduced to one out of five, the city population would be unfairly treated.

TURLOCK.[1]

Turlock irrigation district, since its financial reorganization in 1902, and Modesto district, directly across Tuolumne River, since the refunding of its indebtedness, have furnished the most interesting phases of the history of irrigation district operation in California under the amended law of 1897. In no other districts in the State have the provisions of the law been so fully taken advantage of, and in no other districts have the people experienced so fully the personal and social readjustments necessary in a municipal enterprise of the magnitude of these two districts. The latter statement is made with due realization of the fact that internal controversies have occurred even within the past year, and that they are sure to occur in the future, yet in the belief that the net gain in the ability of the communities to deal successfully with the complicated questions involved in the management of the large properties involved has been a definite and a permanent one.

Water was first available in Turlock irrigation district in 1901, in which year it was used on 3,757 acres. Holdings were scattered widely over the district and any satisfactory delivery of water was out of the question. Few in the district had had experience in irrigation, and in their ignorance of their own difficulties and of difficulties of the district officers many expected far more from the district than it was possible for the district to give. The first few years were therefore naturally stormy ones and meetings of dissenters were frequent and often acrimonious. Being wholly unused to the handling of million-dollar corporations, the farmer-directors, always naturally conservative, felt their way with extra caution and hesitated to spend even pennies where dollars were required for efficient administration. In spite of continual agitation there was only slow improvement in the earlier crude conditions for seven or eight years, and neither the first nor the second nor the third superintendent was able to come up to the expectations of the water users. Happily conditions have greatly changed in Turlock district in the last few years. Although to state that there is no longer

[1] For additional data on the present status of Turlock irrigation district, *see* the report on this district by the Irrigation District Bond Commission of California, dated June 25, 1914. California State Printing Office, 1914.

any trouble would be far in excess of the truth, nevertheless the better attitude of the people of the district toward its management is not the least of the district's present assets. The harness-shop desk room of the first superintendent, paid for by him, has given way to substantial office quarters on the main street of Turlock owned by the district, where at least the essential needs of both engineering corps and office force are provided. So, also, ample automobile conveyance, furnished by the district, has replaced the slower team conveyance of the first years which the superintendent of the district was expected to supply at his own expense. In place of the almost total absence of any records whatever, either as to the running of water or the physical condition of the system, as in the early years of operation, data are now available in quite complete form for nearly every phase of the district's various activities. The first superintendent had few if any facilities for establishing anything like an equitable distribution of water, either among the various laterals or among the users. He had little knowledge of seepage losses on the system and no means of making measurements. The present engineer has two men with current meters constantly employed in determining losses and aiding in the measurement of water to the various distributaries and in assisting the ditchtenders in maintaining the standard "heads." And now with the data at his command the engineer is able to direct such division of the water as will result in delivering to each ditchtender the amount necessary to give him his pro rata share of the entire supply after allowing for seepage and evaporation losses in transit. By knowing the amount of water, in acre-feet, delivered daily to each ditchtender and by having delivery receipts from each irrigator receiving water the engineer is able to keep a close check on the work of the ditchtenders. While it can not be said that distribution is yet always wholly satisfactory either to the engineer or to all of the irrigators, yet conditions both in the handling of the water and in the reasonableness of the irrigators have so greatly improved that water distribution in Turlock district is no longer a source of constant friction.

The present area of Turlock irrigation district is 175,566 acres, 644 acres having been withdrawn in March, 1911. The number of taxpayers has increased from 400 in 1901 to 5,000 in 1914, and the area irrigated from 3,757 acres in 1901 to 95,698 acres, or about 55 per cent of the total area in the district in 1915. Along with this increase in the number of taxpayers and the area irrigated there has necessarily come an increase in the extent of the works and in the bonded indebtedness. The total length of canals and main laterals has grown from 135.16 miles in 1900 to 230.57 miles in 1915, not counting about 700 miles of sublaterals; the bonded indebtedness has increased from $1,170,000.00

PLATE VIII.

Fig. 1.—Ceres main of Turlock Canal.

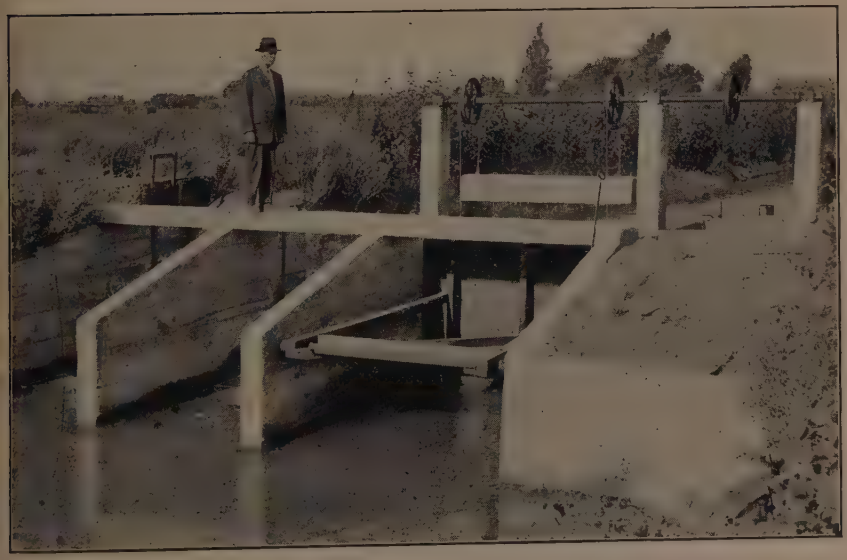


Fig. 2.—Typical concrete check with automatic regulating gate, Turlock Irrigation District.

in 1901 to $2,302,400.00, or $13.11 per acre, at the close of 1914, all bonds except the original funded issue bearing 5 per cent. This increase in bonded indebtedness has raised the tax rate from $2.40 in 1901 to $3.65 in 1914, and the total tax for both bonds and maintenance and operation from $40,766.40 in 1901 to $370,829.89 in 1914. With this increase in tax rate, however, has come an increase in the amount of water run, from a maximum of 535 cubic feet per second in 1904, the first year of keeping records, to a maximum of 1,580 cubic feet per second in 1915. During these years the total assessed valuation within the district has gone up from $1,788,589.00 to $10,165,890.00.

The increased expenditures on capital account since 1901 have been mainly applied to improvements in the upper works, the construction of the Davis foothill reservoir, the construction of new laterals from the old system or the extension of laterals already built, the construction of the high-line canal 28.97 miles long, together with various cross ditches and laterals, and the substitution of permanent for the former temporary structures in different parts of the system. Improvements in the upper works have included new headworks and controlling gates, the elimination of about 900 lineal feet of wooden flumes and the construction in their place of concrete-lined hydraulic fills, the concreting of points in the main canal where seepage was heavy and the banks unsafe, and the reconstruction or the widening and deepening of portions of the main canal above Hickman. Surveys have been made and some preliminary work done and land purchased for an additional reservoir on Tuolumne River about five miles above La Grange, but no provision has yet been made for the cost of construction. Automatic regulating gates have been installed at all principal division points and at many points of minor importance. The present plans of the district, if carried out, will result, in addition to further storage, in completing the enlargement of the main canal to a capacity of 2,000 cubic feet per second from La Grange to Hickman and improving the present distributing system, including the construction of several new laterals necessary to reach land now coming into cultivation and the lining of canals and laterals. The construction of the works of the district and their improvement have not been accomplished without both mistakes and unforeseen difficulties and more than once breaks in the upper works have caused serious damage and not infrequently loss of crops through temporary stopping of the water supply. For an enterprise with such large capital investment and such important construction as Turlock district shows there has undoubtedly been undue conservatism in the employment of special engineering advice, yet the generally satisfactory outcome, both as to acre-costs and character of works, must be considered a definite achievement.

In determining valuations for irrigation district purposes the assessor of Turlock irrigation district is now endeavoring to appraise land at about 50 per cent of its market value. Prior to 1910 it was usual to take the county assessment roll in making up the district assessment roll. In that year the district assessor raised all of the lands $20.00 per acre regardless of their value, which of course resulted in a very much larger percentage of increase on the low-valued lands than on those that were valued high. That arrangement, however, was only temporary, although the present assessor has held to the valuations of $20.00 above the county assessment on average land of the district. The highest valuation placed on any of the farm lands in the district is now $80.00 per acre. Land too high to receive water from the canals, but which can still be used for dry-farming, is assessed at $15.00. Land that has been swamped by irrigation is valued at $1.00. Land available for suburban subdivision adjoining the city limits of Turlock in some cases runs up to a valuation of $150.00 per acre. Around other towns in the district assessment is entirely on a farm land basis. The assessor is now endeavoring to consider all of the elements that make up market value, as character of soil, proximity to town, etc. Up to 1915 the town property has been given a value slightly below that carried on the county assessment roll, this favoring of the towns having been considered justifiable because of the extra local taxes there for town improvements. Land in all of the towns is carried at the figures given on the county assessment roll, which are estimated to range from 40 to 50 per cent of market value. In 1914 the district voted to exempt improvements from irrigation district taxes.

Turlock irrigation district has tried various methods of supervising water distribution and delivery. At first both maintenance and operation and all engineering work were in the hands of the engineer and superintendent. Later a superintendent of water delivery was placed directly under the board and the duties of the engineer were confined to engineering matters. There has recently been a demand for putting the entire responsibility for engineering and distribution in the hands of a single official and that plan is now followed, an assistant engineer attending to water delivery under the direction of the chief engineer. Water delivery records are kept in both field and office. In January each ditchtender goes over his entire division and receives from each irrigator applications for water for the pending season, specifying the acreage of each crop to be irrigated. These applications are copied in alphabetical order into a book in the district office and form a permanent record. There is also kept in the office a typewritten list of the irrigators under each ditchtender, arranged in the order in which they

are to receive water, and showing the number of acres each is to irrigate. Gauges are installed at the point each ditchtender receives his supply from the main canal and also at each point of delivery. All land is irrigated in rotation, beginning at the lower end of the canals, the average alfalfa "head" being 20 cubic feet per second measured at heads of private ditches and the time allowed usually being thirty minutes to the acre which, after allowing for seepage, gives a depth of approximately .60 foot over each acre for each irrigation. Where 10 cubic feet per second is delivered one hour is allowed in order to give the same quantity. This smaller head is called for only for orchard and other furrow irrigation. When there is an abundance of water the time of irrigation is extended on account of high checks or other conditions making distribution difficult. In the delivery of water, receipts are taken in triplicate from each irrigator, the original being sent to the office at Turlock, one copy being given to the irrigator, and one copy retained by the ditchtender. Private ditches are all maintained by the irrigators who receive water from them. Some of these are in poor condition and where such is the case the district frequently refuses to turn in water until conditions are improved. At present thirty-one ditchtenders are employed, mostly at the rate of $75.00 per month, and their time for eight months is charged to operation and for four months to maintenance. A machine shop is maintained with a machinist at $100.00 per month, a blacksmith at $3.50 per day, and a helper at $2.50 per day. There is also maintained a repair camp with a foreman at $90.00 per month, two helpers at $72.50 per month, a cook at $45.00 per month, and eight day employees at wages ranging from $2.25 to $3.00; also a ditch maintenance camp with a foreman at $75.00 per month, and fifteen teamsters, helpers, laborers, and carpenters at wages ranging from $2.25 per day to $50.00 per month. The expense of the repair camp is charged to maintenance and operation for eight months and to new work for four months each year, and that of the ditch maintenance camp to maintenance and operation for four months and to new work for eight months. The cost of superintendence of maintenance and operation, including all measurement of water, is $600.00 per month for eight months each year. The general office force at Turlock consists of the secretary at $100.00 per month, bookkeeper at $100.00 per month, assessor-collector-treasurer at $175.00 per month, and clerical and other help at a total of $115.00 per month.

Alfalfa is still the principal irrigated crop in Turlock district, the acreage devoted to it in 1915 being 64,558 acres. Other crops and acreages are: vines, 3,208 acres; trees, 4,722 acres; garden, 837 acres; corn, 5,870 acres; beans, 863 acres; sweet potatoes, 3,151 acres; melons, 3,840 acres; grain, 5,594 acres; miscellaneous, 1,660 acres; berries, 9 acres; new land, 743 acres; nursery, 643 acres.

In recent years it has been the policy of the board of directors of Turlock district personally to give a great deal of their attention to the physical properties of the district. For this purpose they have met frequently and have frequently gone over the district works, especially during reconstruction and important repairs. The law allows directors a per diem of $4.00 for each day devoted to the affairs of the district. The total amount received by them in fees in 1914 amounted to approximately $2,500.00, indicating that on the average each director devoted about 125 days to district affairs during the year. It is estimated that during 1915, however, each director will average only about three or four days per month. At present the directors work largely through standing committees which change frequently in order to keep the various members of the board in close touch with district affairs. Except in one or two instances, it is believed that the boards of directors of the district have worked harmoniously together, yet there has been some local public criticism of the policy of the board under which its members frequently undertake to determine matters about which only the engineer of the district, or better, a consulting engineering specialist, is best able to judge. Out of this situation there has grown up a considerable sentiment in favor of the employment of a district general manager with whom final responsibility should be lodged. The recall has been employed in Turlock district on only two occasions, and then against individual members of the board of directors. In each case it was unsuccessful, the incumbents being retained by substantial majorities.

ALTA.

This district is the third largest in California, with 130,000 acres. Although during the hard years following the early nineties and prior to the bond settlement and refunding in 1901 and 1902 it was in poor financial condition, it has never ceased activity since organization in 1888, and is now in a generally prosperous condition. Old wooden structures are gradually being replaced with concrete, the cost of this being paid from annual assessments for maintenance, operation, and betterments. Work of this character done since the bond settlement in 1901 and 1902 has included a new main headgate of reinforced concrete in Kings River, costing about $9,000.00; a light concrete dam 96 feet long at Wahtoke Creek, costing only about $250.00; 1,500 lineal feet of 4-inch concrete lining in the main canal at Dunnigan Gap where the canal is 50 feet wide on the bottom, costing about $9,000.00; about 250 concrete drops replacing wooden structures and costing from $100.00 to $500.00 each; a concrete flume across Sand Creek, costing about $500.00, and the lining of sections in a number of laterals. In all it is estimated

by the superintendent that two-thirds of the wooden structures on the main laterals have been replaced with concrete. The system is in such shape now that 1,300 cubic feet of water per second can be carried and distributed whenever that amount is available from the river and is wanted by the irrigators.

Irrigation practice in Alta irrigation district is still very wasteful. No measurements are made to irrigators and except in very dry years they are given whatever water they want. As a rule, the land has not been well prepared. Usually both orchards and vineyards, which together make up more than one-fourth of the crops grown, are irrigated, and most generally by various methods of basin flooding, the application of as much as 1.5 to 2 feet in depth per irrigation being not at all uncommon. Several thousand acres in the district are still in grain, but this is not irrigated much now. About 15 per cent of the farms now have pumping plants to supplement gravity irrigation, when the Kings River supply gives out, as it usually does by July. No steps have been yet taken by the district to provide drainage, which is still needed in parts of the district. No ground water records have been kept, but the superintendent of the district states that in the dry years of 1913 and 1914 the water table lowered in sections about four feet. About Reedley it now stands at ten to twenty feet below the surface in the fall of the year, according to information furnished by the superintendent, and at five to seven feet below the surface about Dinuba. In the southwestern portion of the district it is generally higher, especially when water is being run.

Alta irrigation district is operated at a relatively low cost. Assessments for operation, maintenance, and betterments since 1910 have ranged from $27,500.00 to $35,000.00, or not over an average of 25 cents per acre per year. Valuations of farm properties for district assessment purposes have with a few variations ranged from $30.00 per acre for the best lands down through successive and somewhat arbitrary grades of $27.50, $25.00, $20.00, $15.00, $12.50, $10.00, $7.50, $5.00, $3.00, and $2.50, the two lowest valuations being for some alkali lands in the two southern divisions. Land of good quality lying adjacent to the canals, but just too high to receive water by gravity, is valued at $10.00 to $20.00 on the ground that it is benefited by subirrigation. Improvements on farm properties are assessed in about the same ratio. All of the several towns of the district, including Dinuba, Reedley, and Traver, are within the legal boundaries. Lot valuations range from $20.00 to $60.00 for a 20-foot by 150-foot lot, exclusive of improvements, the latter being added at about 20 per cent of their cash value. In the district assessment of 1914 town lots were given a total value of

$128,504.00; improvements on town lots, $204,505.00; real estate other than town lots, $2,348,733.00; improvements thereon, $356,965.00; miscellaneous properties, $6,000.00; total, $3,044,707.00. It will be noted that town properties carry about 11 per cent of the total district tax. The assessor of the district, individually or through deputies, visits each tract in the district for district assessment purposes yearly and requires an individual declaration from each property holder, as in the case of city and county general assessments in California. Alta is the only irrigation district visited in which this practice is followed.

The operation of Alta irrigation district has resulted in greatly reducing the size of land holdings and in increasing the number of district taxpayers from about 800 in 1895 to about 3,100 in 1914. There are now more holdings of 20 acres than of any other size, many of 40 acres, a few of 160 acres and under 320 acres, and an occasional half-section. Originally there were many full sections in the district and some holdings of several sections.

The salaried force of Alta district is modestly paid, the superintendent receiving $1,500.00, the assessor $800.00, the collector $800.00, the secretary $600.00, and the treasurer a nominal salary only. While the board of directors hold the usual monthly meetings and confer with the superintendent, and occasionally send out a committee of one or two board members to make special observations, the management of the physical properties of the district is left almost wholly to the superintendent. No delivery records are kept and, as already stated, no measurements are made to irrigators. At present the delivery force under the superintendent consists of seventeen men, each of whom receives $75.00 per month for six to seven months yearly as ditch-tenders, and day wages at other times during the year when their services can be used in repair work and canal cleaning. The district builds and maintains all gates on canals and laterals situated on rights of way owned by the district.

Although the funding bonds issued by Alta district in 1902 do not begin falling due until 1921, bonds to the value of $41,500.00 have already been redeemed from surplus interest assessments, 68 having been taken at .932 and the remaining 15 at from .896 to .95. It is the policy of the district to reduce bonds whenever there is a surplus in the bond fund of $5,000.00 or $6,000.00. The present bonded indebtedness is $451,000.00, or at the rate of only $3.47 per acre. No bonds have been issued since the funding bonds of 1902.

PLATE IX.

Fig. 1.—Alta Irrigation District Canal near Wahtoke Lake.

Fig. 2.—Typical orchard irrigation in Alta Irrigation District. (Note excessive use of water.)

TULARE.

The community served by Tulare district has made definite progress since its bond settlement in 1903, and there has been a considerable improvement of the irrigation systems. As an organization, however, Tulare district has not advanced materially. So severe was the lesson of the old bond indebtedness that since that was wiped off and the bonds burned the community has been very much averse to using the taxing power of the district law. With the exception of one assessment of $10,000.00 in 1909 for betterments, none has been levied since the settlement, the entire cost of maintenance and operation and of some minor betterments having been met from water tolls. Owing to the wide fluctuation in the amount of water used each year, which is dependent on the supply available to the district from Kaweah and St. Johns rivers, the amount raised from tolls has also fluctuated. The smallest annual income of record was that of 1913 when only about 100 acres was watered and only $141.75 received from tolls. The largest area ever irrigated is estimated by the superintendent at 15,000 acres. Eliminating the year 1913 above referred to, the total tolls from 1909 to 1914 have ranged from $2,981.85 in 1912 to $10,475.20 in 1911. It is estimated by the superintendent that about 6,000 acres will be watered in 1915. The tolls charged for water are usually $1.50 per acre for the first irrigation and $1.00 per acre for each subsequent irrigation, although they have in times past been as low as 50 cents per acre per irrigation.

The improvements made in the works of Tulare irrigation district have not involved any large expenditures. A concrete siphon 300 feet long under Kaweah River, with a claimed capacity under an 8-foot head of 300 cubic feet per second, cost $3,200.00. Most of the wooden check gates in the canals above Tulare have been replaced by concrete checks at an average cost estimated by the superintendent at $250.00. A concrete structure at the Cameron Creek crossing of the main canal, so built as to permit the passage of Cameron Creek when so desired, involved an expenditure of $1,500.00. Other improvements, with approximate costs when known, have been as follows: Raising and repairing of dam at the St. Johns River intake, about $300.00; waste-way one-quarter mile below the dam, about $250.00; repairs to span at St. Johns River crossing, about $700.00; replacing of second span at St. Johns crossing; new wooden delivery headgates. In addition to these improvements, twelve acres have been purchased for a right of way in Cameron Creek at a cost of $2,500.00.

The original area included in Tulare district was 39,360 acres, but some lands have been excluded since organization and the exact present area is not known by the district officers, but it is still probably in excess

of 35,000 acres. The city of Tulare, covering about three full sections, was taken out in 1911 and about 750 acres was taken out two years later.

The principal irrigated crop in Tulare district is still alfalfa. As a rule orchards and vineyards, due to the availability of ground water, are irrigated only in the drier years. Grain crops are not watered, but after harvesting the grain many irrigate the land and plant Kaffir or Jerusalem corn. The district has no storage reservoir and, as a rule, the water available after satisfying prior rights runs out by July 15th. After that, however, pumping from underground sources is resorted to, a large majority of the farmers having installed pumping plants in the dry years 1912 and 1913 if they had not already done so before. These pumping plants have done much both to improve the available water supply and to reduce danger from the rise of ground water. Most farmers in the district irrigate only once from the district canals, except that when the season makes it desirable to irrigate as early as March, a second irrigation is called for. Rarely a third irrigation from the canal system is practiced.

The irrigation system of Tulare irrigation district is operated very economically. The superintendent, receiving $125.00 per month, and the secretary, who furnishes the district office quarters, receiving $35.00 per month, are the only members of the force who are continuously employed. One headgate man is given a house and his provisions and a salary of $65.00 per month for about six months each year. Three ditchtenders are usually employed during the irrigation season at $2.50 per day, each ditchtender furnishing and maintaining his own conveyance. During the nonoperating season such help is employed as is needed to do whatever work money is available for, this amount, as already indicated, depending on the quantity of water available during the months irrigators want it. Water is delivered in rotation, commencing at the upper end of the various delivery divisions, except that no water is delivered except as paid for in advance at the office of the secretary of the district in Tulare. On receiving application and payment for water the secretary issues a written order on a special printed form and this reaches the proper ditchtender through the superintendent, all ditchtenders reporting in person to the superintendent in the district office daily and at other times by telephone. The district canal system carries from 300 to 350 cubic feet per second and the usual delivery head is ten cubic feet per second, each user being allowed to retain the water as long as desired. Usually irrigators are given as much water as their ditches can carry. As a result of the lack of restrictions in delivery the use of water is very ununiform and generally wasteful. The district builds and maintains all gates and checks on the main canal and on all distributing laterals, exclusive of those on

PLATE X.

Fig. 1.—Concrete spill and crossing, Alta Irrigation District Canal.

Fig. 2.—Cameron Creek crossing, Tulare Irrigation District Canal.

farms. The management of the system is, in practice, entirely in the hands of the superintendent, the members of the board of directors giving very little attention to it, and knowing little of its physical condition. It is said that there are never any contests for places on the directorate.

In connection with the management of Tulare irrigation district it should be noted that, because all maintenance and operation expenses are paid from water tolls collected only from those who use water from the canals, the landowners in the district who do not irrigate from the district system pay nothing toward its maintenance or toward the maintenance of the water supply in which all have a share. In other words, although all in the district have a right to receive water from the district, they pay nothing for the privilege unless they use water from the canals.

ALPAUGH.

This district was organized March 22, 1915, after consideration extending over several years. The land embraced is the principal portion of Alpaugh Colony and is located in Tulare County on a slightly raised portion of the old bed of Tulare Lake. Alpaugh Colony was established in 1906 by a colonization company that had purchased about 9,000 acres of land situated seven miles southwest of Angiola. The land in this colony was sold to the settlers at $19.00 per acre, each acre carrying one share in the Second Extension Water Company, for which $6.00 additional was charged. The agreement under which the colony was established provided that, through the Second Extension Water Company, water should be furnished the settlers at the rate of 200 inches for twelve hours once every thirty days for each share of stock held in the water company. The original plan is said to have provided that this water should be developed within the colony. That plan, however, was changed, and instead a supply was developed from a number of flowing wells at Smyrna, in Kern County, 9.5 miles south of the colony. This supply is still used and is reported to amount to about 900 inches in the winter months and to from 500 to 600 inches in summer, in both cases measured at the wells. From the wells it is carried to within one mile of Alpaugh through a 12-mile open ditch and at that point is pumped a total height of about seven feet for distribution over the colony. As operated by the Second Extension Water Company, the cost of maintenance and operation is met by frequent assessments on the stock, all stock being liable for these assessments regardless of whether water is used. The usual assessment has been 60 cents per share and this amount was levied five times in 1913 and in 1914, and it is expected that it will be levied five times during 1915.

While about 9,000 shares of stock in the water company were sold, only about 7,000 shares are still in good standing, some of the nonresident owners having ceased paying assessments.

Alpaugh irrigation district was organized to take over the property of the Second Extension Water Company, the election on organization having been carried by a vote of 71 to 14. At a previous election, on August 26, 1914, 53 votes were cast in favor of the district and 22 votes against it, but as there were 13 additional votes cast for officers of the district which were not marked for or against the district organization, it was held that the 53 votes cast in favor of the organization did not constitute the required two-thirds of the total vote and the election was declared lost.

The purpose of the organization of Alpaugh district has not been merely to substitute an irrigation district for a mutual water company for operating purposes, but in order to finance improvements. The supply now being obtained from Smyrna is inadequate for the needs of the colony, largely because of being conveyed in an open canal in which seepage losses are heavy and in which tule growth greatly reduces the flow. This canal varies in width from 25 to 45 feet and the grade is only about one foot per mile. Plans for improving and enlarging the water system have not yet been settled upon by the district. The petition for organization specified that the water supply was to be obtained from wells already sunk or to be sunk in sections 23, 26, and 27, township 25 south, range 23 east, and from other wells in that vicinity and in the district. It is locally hoped that a supply can be obtained within or near the district in order to avoid the long carriage from Smyrna. If the Smyrna supply is continued it is proposed to cement the canal. The district has already spent about $1,000.00 in surveys and other preliminary expenses, having raised the necessary money for this purpose by issuing seven per cent warrants, which were taken over by a Visalia bank and discounted to bring the bank eight per cent. When the engineering plans are completed they will be submitted to the State Department of Engineering and if approved will be the basis of a bond issue. As the district proposes to build a first-class distributing system, as well as to increase the water supply, it is expected that the cost per acre will approach $30.00 to $40.00.

The irrigated area in Alpaugh irrigation district is now something over 2,500 acres, of which about 1,500 acres are in alfalfa, about 300 acres in seeds, and the rest in sugar beets and grain. The assessed valuation of the district according to the county assessment roll of 1914 was $111,837.00. The petition for organizing the district carried 182 names which, it is said, represented about two-thirds of the property owners and about two-thirds of the total value of the land. In laying

PLATE XI.

Fig. 1.—Reconstructed Main Ditch, Little Rock Creek Irrigation District.

Fig. 2.—Underground distributing system, Little Rock Creek Irrigation District.

out the district an attempt was made to keep the land within the district in a solid block, but since organization several holdings have been eliminated. The town of Alpaugh is not included.

Alpaugh irrigation district was not formed without considerable opposition. During the campaign for the district a number of printed pamphlets were issued giving arguments for and against it. The first petition for the formation of irrigation district was circulated in a portion of the colony in 1912 and then dropped in order to eliminate the townsite of Alpaugh. The second petition met further opposition and was also dropped. A third petition was declared inadequate by the board of supervisors because it contained the signatures of those who were then owners of lands in the colony, rather than of those whose names appeared on the previous assessment roll. It is now stated by the officers of the district that in the main those who most actively opposed the formation of the district have since either been won over or moved away. The exclusion of several tracts of land originally in the district also served to eliminate some of the opposition.

LITTLE ROCK CREEK.

Since the financial reorganization of this district during the past four years, physical and agricultural conditions have been greatly improved. The principal ditch from Little Rock Creek has been lined with concrete for the first three miles, and a concrete pipe from 16 to 20 inches in diameter substituted for the remaining distance. Distribution from the main ditch is effected through underground concrete pipes, the principal laterals having been constructed by the district and the farm laterals, so far as yet built, by the landowners. Delivery from the main laterals to the farms is made through concrete boxes of the Azusa type and from the farm laterals through concrete standpipes. These improvements in the irrigation system, except the farm laterals paid for by the landowners, have been made with the $35,000.00 bond issue voted in addition to the $25,000.00 issue used for refunding the old bonds. The saving in seepage losses that has been brought about by the improvements has permitted an extension of the irrigated area, there being between 1,400 and 1,500 acres, mostly in Bartlett pears, under cultivation in the summer of 1915. Most of the land in the district, however, is still owned by nonresidents, and there are several subdivisions, laid out some years ago, which have not been largely used or occupied. Some of the latter and one considerable acreage holding have been going delinquent in the matter of district taxes until there is some discussion of having the areas involved eliminated from the district, if that proves feasible.

On the basis of valuations for district assessment purposes of $30.00 per acre in the upper portion of the district, of $20.00 per acre in the lower portion, and of $10.00 each for lots, the 1914 equalized district assessment for the whole district totaled $77,678.00. With the distributing system now extended to the lower areas they will henceforth be assessed at the same figure as those formerly alone within reach of the water system. The 1914 rate of assessment for bond interest and maintenance and operation was ten cents on the dollar.

A single ditchtender attends to water delivery in the district, working through the irrigation season only. Water is not measured. The cost of delivery has thus far been met entirely by assessments but it is contemplated that a water toll will be added for water pumped after the gravity supply in Little Rock Creek falls off. The source of pumped water is a cienega owned by the district near the head of the main ditch. About forty voters voted at the district election in 1913.

BIG ROCK CREEK.

This was one of the early Wright districts and the essential features of its early history have already been given. In May, 1914, a third movement to colonize the district was begun by a group of Los Angeles socialists who have established there the Llano del Rio Co-operative Colony. This colony and the Mescal Water and Land Company together have purchased about 3,000 acres of land in the district and additional purchases up to about 20,000 acres are contemplated. Nearly all of the land in the district is now said to be patented. At the instance of those back of this movement a new board of directors for the district was appointed by the supervisors of Los Angeles County in 1914, and in February, 1915, a board and other necessary officers were elected by the colonists. Of these officers the president and secretary are the vice president and assistant secretary, respectively, of the colony company, all of the other officers also being members of the colony. Thus the district is merely an adjunct of the colony, it being understood that the officers of the district will conform to the general control exercised by the officers of the colony.

On reviving Big Rock Creek irrigation district the Llano del Rio colony proceeded to clean out, repair and extend the old district ditches. To avoid litigation the colony also purchased certain water claims adverse to the district that had been sold to the district at the time of organization in 1891. Water is diverted from Big Rock Creek in two places, each heading consisting of a temporary rock dam and wooden headgate. The half-mile tunnel constructed several years after the first failure is still utilized, but does not yield a large supply of water. None of the ditches are yet lined and it is locally estimated that more

PLATE XII.

Fig. 1.—Big Rock Creek at head of Big Rock Creek Irrigation District Ditch, June 30, 1915. (Water above normal.)

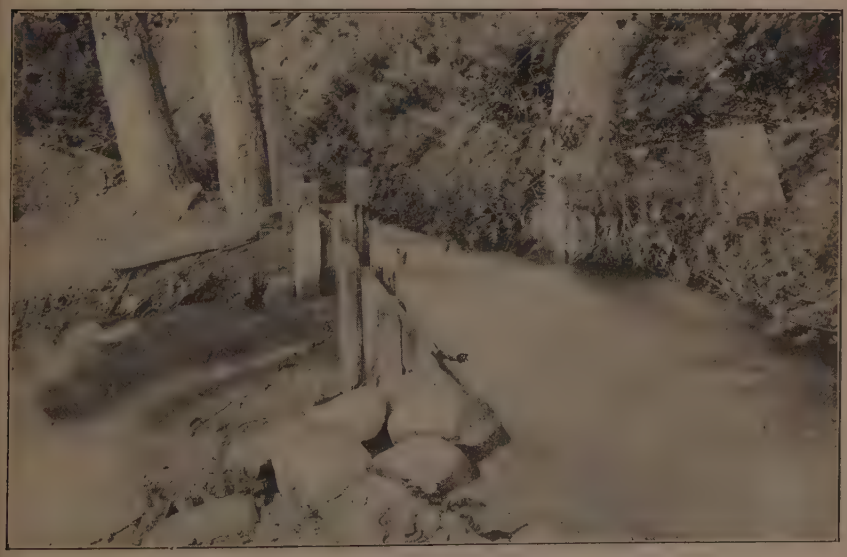


Fig. 2.—Head of Big Rock Creek Irrigation District Ditch.

than one-half of the water diverted is lost in transit. Ultimately, however, it is proposed to line the main ditch with cobble stones and to use vitrified clay pipe, to be made by the colonists, for laterals. It is also proposed to build a reservoir directly above the junction of Rock and Pallett creeks. Run-off data for Rock Creek are meager, so that the water supply available is uncertain. Previous failures having proven the direct flow of this stream to be altogether undependable, the future of this later development will depend first of all on the feasibility and possibility of storage. With an abnormal flow in Big Rock Creek during recent wet years Llano colony has been enabled to accomplish a considerable agricultural development. In July, 1915, the area under cultivation approximated 700 acres, the irrigated crops including alfalfa, pears, apples, peaches, apricots, almonds, grapes, small fruits, corn, truck, and a few sugar beets. The fruit that is expected to receive the principal attention of the colonists is the Bartlett pear. Land in the colony is all held by the colony corporation rather than by individual colonists, the colonists merely holding memberships and most of them living in the town of Llano rather than on farms. The colony now has about 400 members living in the district.

BLACK ROCK.

This district was carried January 27, 1915, by a vote of eight for and none against organization. The total area, according to the latest figures furnished by the secretary, is 1,750 acres, of which 1,090 is government land under some form of entry and 660 acres is patented. The land included is in 29 separate parcels ranging from 20 to 200 acres in area and in June, 1915, was held by 27 owners. According to information furnished by the secretary the petition for organization carried the names of or subsequently received the approval of all but six of the landowners, and all who voted at the organization election are said to belong to the families of actual residents of the district. Most of the land that is still unpatented has been filed on within the past two years, several entries having been made in order to be included in the district.

Black Rock irrigation district lies in township 11 south, range 34 east, Mt. Diablo base and meridian, on the west side of Owens River Valley midway between Independence and Big Pine, Inyo County. The lands of the district are generally a plain sloping from the base of the mountains to the floor of the valley, this plain being somewhat broken with ravines and intervening low ridges. The original sources of water planned on were Red Mountain Creek and wells. It was proposed to purchase water rights in Red Mountain Creek from a local mutual water company, which is in turn controlled by a local orchard company.

This plan, however, has been abandoned, and the directors are now seeking satisfactory underground sources. The plans for a distributing system submitted by the engineer employed by the district call for 41,773 lineal feet of cement-lined ditches, the estimated cost of which is given as $14,173.00. In reporting on the feasibility of this district in May, 1915, the State Department of Engineering assumes a net duty of water of 1.8 acre-feet per acre per year and estimates that a flow of 10 cubic feet per second, exclusive of transit losses, will be required in order to supply the maximum amount required in any one month. Allowing for transit and application losses of 20 per cent, the amount required during the month of maximum use, when it is assumed, on the basis of local data, that 23 per cent of the total seasonal quantity used will be applied, is given as 12.8 cubic feet per second.

WALNUT.

There has been little if any change in the status of this district from that outlined in the history of the district already given. A substantial concrete intake box has been built at the lower point of waste from the Standifer or Ranchita users, with a 30-inch concrete pipe under the Santa Fe track connecting the intake box with the concrete-lined ditch above. Inside of the district line 4,600 feet of concrete main pipe lines have been laid ranging in size from 36 inches down to 24 inches, the remainder of the main distributing system being open concrete-lined ditches, with two main branches. Water is still charged for at the rate of ten cents per "head" for twenty-four hours and most of the time sufficient water is available. There has been some misunderstanding with the Standifer or Ranchita users as to the right of the district to receive any day water, the former claiming the entire day supply to the exclusion of the district. A readjustment of this difficulty seems to be pending.

LA MESA, LEMON GROVE, AND SPRING VALLEY.

The question of bringing water to the "back country" of San Diego County has occupied a large share of the attention of the people of that county for nearly two generations. With agricultural conditions admittedly favorable to the successful growth of citrus and other valuable fruits, with climatic and other physical features such as to make the section exceedingly attractive for residence purposes, but with only a meager normal rainfall and a water supply entirely inadequate for irrigating all of the tillable lands of the county, the need for conserving such water as the various local drainage basins afford has long been obvious. The most active movement in that direction occurred in the late eighties and early nineties with the formation of the numerous

PLATE XIII.

Fig. 1.—Main Ditch of Walnut Irrigation District.

Fig. 2.—Lateral Ditch in Walnut Irrigation District.

Wright irrigation districts that were scattered from Escondido to Otay, but which, for reasons already cited, and after being rather violent storm centers for a number of years, finally one after another ceased activity. After the old irrigation districts came private water development and development by mutual water companies, the newer enterprises in several instances taking over rights and works acquired by the districts. Recently the city of San Diego has taken over the properties of one of the larger private interests and still more recently, on October 17, 1913, La Mesa, Lemon Grove, and Spring Valley irrigation district, in part covering territory included in one of the old Wright districts, has been organized to improve the water situation of several of the communities dependent on the San Diego River supply.

La Mesa, Lemon Grove, and Spring Valley irrigation district embraces 14,794 acres around the rural communities from which it takes its name. These communities have been supplied by the Cuyamaca Water Company, which is the successor of the old San Diego Flume Company, local distribution having been attended to by small mutual water companies. Irrigation water rights have generally called for a continuous flow of water at an annual cost of $70.00 per miner's inch, but water has not usually been needed in the winter months, and has frequently not been available when most wanted in the summer. The Cuyamaca system was built in early days when permanent irrigation construction was not common and it has not kept pace with the needs of the communities it has served, which, in addition to La Mesa, Lemon Grove, and Spring Valley, have included El Cajon Valley, La Mesa Heights, and part of East San Diego. In the dry fall of 1911 the necessity for community action in water matters became very evident, and led by the consumers of Spring Valley, an agitation began which finally resulted in the formation of La Mesa, Lemon Grove, and Spring Valley irrigation district. The first steps taken were for the formation of a municipal water district under the municipal water district act of May 1, 1911, and such a district was formed by a vote of 429 to 1, September 23, 1912. Some difficulties encountered under that form of organization led to the substitution of the irrigation district and this was organized by a vote of 397 to 3.

The area embraced within La Mesa, Lemon Grove, and Spring Valley irrigation district is practically a suburb of the city of San Diego. While some 1,200 to 1,300 acres are already in groves, mostly lemon, and some 7,500 acres have been used from time to time for dry-farmed grain, the section has already become largely used for residence purposes. The town of La Mesa embraces approximately 2,000 acres and while there are a few holdings of several hundred acres within the town limits that have not been subdivided, subdivision plats for most of La

Mesa have been recorded and the area will always be essentially a residence one. Outside of La Mesa some 28 recorded subdivisions embrace approximately another 2,000 acres, but as development progresses readjustments of holdings will undoubtedly reduce the number of resident lots. In the lemon section around Lemon Grove 600 or 700 acres are already in groves of mostly five and ten acres, with homes of their owners already established on them. In the same section an additional area of equal extent has been disposed of in holdings of similar sizes and only awaits an additional water supply before being planted and occupied. Much of the area within the district is too rough for cultivation and suitable only for homesites. The entire area within the district that is not susceptible of cultivation has been estimated at about 2,000 acres, but in the absence of a careful soil classification it is not possible to determine how much can be profitably cultivated. To any one at all familiar with southern California communities, however, it is evident that the feasibility of an irrigation district such as that around La Mesa, Lemon Grove, and Spring Valley can not wholly be determined by the area of land on which groves will be commercially profitable, for when a dependable water supply is obtained the number of strictly home holdings is sure to increase greatly, so that La Mesa, Lemon Grove, and Spring Valley irrigation district more nearly approaches a municipality than is usual among irrigation districts elsewhere.

When La Mesa, Lemon Grove, and Spring Valley irrigation district was organized San Diego River was given as the source of the proposed water supply. After organization an engineer was employed to make a careful study of the feasibility of that source and to outline a complete system of works. The report of the engineer filed in January, 1914, recommended storage on San Diego River just above Mission Valley and but a few miles from the district line. His plan called for an arch dam 103.5 feet high about three-fourths of a mile below the old Mission dam, the water to be impounded amounting to 34,000 acre-feet. Hydrographic data considered in the study of the engineer indicated that during 18 out of 26 years embraced in the available record, water could be taken from the main reservoir at an elevation of 245 feet and delivered through a 24-inch pipe line to the main pump, 4,200 feet down the canyon, at an elevation of 240 feet. From this pumping plant it would be lifted against a total head of 362 feet to the main distributing reservoir, but as about 3,000 acres of the district lie above the main distributing reservoir, a high level service was proposed that should start at an elevation of 700 feet from a high-level reservoir of 2,000,000 gallons capacity. The distributing system leading from the reservoirs as outlined in the plan was to be entirely of riveted-steel pipe, a 12-inch diameter being used on the high-pressure line and from a 36-inch

diameter down on the remainder. The plan further provided that when the surface reservoir on San Diego River should become exhausted pumping from wells in the upper portion of the reservoir site should be resorted to. The ultimate supply of water estimated in the report to be furnished was 1,000 inches, but the distributing system planned provided for the handling of only 500 inches for the present. The costs estimated by the engineer were as follows: Dam and reservoir, $733,958.00; wells and pumping plants in upper portion of reservoir site, $133,002.00; main pumping plant, force mains, and summit tunnel, $173,950.00; distributing system, including reservoirs, $246,760.00; total, $1,287,580.00, or at the rate of $87.03 per acre, counting entire area in the district. In estimating the amount of water necessary the engineer counted on one acre-foot per acre per year over 12,000 acres. The report stated that while it was realized that a more abundant supply of water would be desirable if available, the situation in San Diego County is governed by the amount which may be depended on rather than the amount which may be an ideal quantity.

On the basis of the engineer's report above outlined an election was held on May 4, 1914, on a proposition to issue the bonds called for in the report. The petition for this election was signed by 799 property owners of the district and the election was carried by a vote of 541 to 10, showing practical unanimity as to the desirability of going ahead. Since that election the district officers have been endeavoring to adjust possible differences over the rights to San Diego River, particularly with the city of San Diego. They have further entered into an agreement with the owners of the Cuyamaca water system to purchase that system in district bonds at par and at a price to be set by the State Railroad Commission, whose decision is expected at any time. The purchase of the Cuyamaca system, if carried through, will necessarily to some extent alter the engineer's plan for storage in and pumping from El Cajon reservoir. The district has been negotiating with the city of San Diego for the joint ownership of the Cuyamaca system, but in the event that such joint ownership is not entered into and the district itself purchases that system according to the agreement with its owners it is expected that the system will be improved and extended as needed to meet immediate demands, the first work probably being the enlargement of the distributing system, the raising of the La Mesa dam, and the construction of an additional reservoir in the mountains.

After La Mesa, Lemon Grove, and Spring Valley irrigation district was organized a valuation of the property by the district officers totaled $4,254,500.00. The values used were taken to be those at which property had changed hands. The valuation assessed for district purposes in 1914 approximated $2,000,000.00, of which $709,000.00 was for city

and town lots, the assessors having endeavored to enter the lots at about 40 per cent of their sale value and acreage property at about 50 per cent of its sale value. The maximum acreage valuation outside of the town of La Mesa was $250.00. In La Mesa the base for acreage assessments was $350.00 per acre and the property within the town limits not yet subdivided but subject to subdivision was entered at $400.00 per acre. Outside of La Mesa assessments ranged from $75.00 to $250.00 per acre and lots from $20.00 to $150.00, the latter being for lots 50 feet by 140 feet in the main business section of Lemon Grove. In the city of La Mesa the average assessment for lots was about $250.00 outside of the main business section. In 1914 the assessor found approximately 9,000 separate parcels of land within the district, of which not over 25 were in holdings exceeding 70 acres, these 25 larger holdings embracing a total of approximately 6,500 acres.

Financial operations of La Mesa, Lemon Grove, and Spring Valley district to date have included an assessment of seven mills on a valuation of $2,709,000.00 in 1914, yielding a total of $18,963.00, without the allowance for delinquencies, and also a sale of $55,550.00 of the bonds voted in May, 1914, at prices ranging from 85 to par. Of the bonds sold $45,000.00 were paid for land in the El Cajon reservoir site, other bond and assessment expenditures having gone for engineering and general expenses.

SAN YSIDRO.

This is the smallest irrigation district in California, probably the smallest in any of the states, containing only 485 acres. It was formed in 1911 in order to effect a financial reorganization of the water situation in the Little Landers Colony established in Tia Juana Valley, San Diego County, in 1909. The district lies wholly within the old Otay district formed under the organized Wright act and as Otay district has never been dissolved, it was necessary before San Ysidro district could be formed to revive Otay district sufficiently to enable the San Ysidro lands to be excluded. The election on organization of San Ysidro district was held March 11, 1911, and was carried unanimously. After approval by the state irrigation district bond commission, a $25,000.00 five per cent bond issue for reconstructing the irrigation system of the colony was voted December 12, 1912, the entire issue being subsequently sold for cash to a San Diego bank for $25,010.00. The new works built by the district included pipe lines, costing $17,360.17; wells, costing $1,014.37; pump, motor, and pump house, costing $4,915.49; reservoir No. 1, costing $1,319.49, and reservoir No. 2, costing $918.62. Adding $1,480.60 for engineering and superintendence, the total original cost was approximately $27,000.00. Since these

PLATE XIV.

Fig. 1.—Typical Two-acre Farm in San Ysidro Irrigation District, showing distributing hydrant and pipe.

Fig. 2.—Main Pumping Plant, San Ysidro Irrigation District.

works were finished additions have brought the total cost to about $28,000.00.

San Ysidro irrigation district is operated on a combined toll and assessment basis. At first assessments were levied for bond interest only, other expenses being met by monthly water tolls of $1.25 per acre for acreage property and of $1.50 for each 50 foot by 100 foot lot and domestic use thereon. Beginning in 1916, it is planned to collect a greater portion by assessments and to reduce monthly water tolls to about 50 cents per acre for acreage property, 30 cents for each lot, and 60 cents for domestic use in each house. Under this plan more of the financial burden will be borne by nonresident owners than at present. A slight readjustment of the valuations for assessment purposes, by which there will be a more careful differentiation as to character and location of the holdings, is also planned. Up to 1915 all farming lands on both mesa and bottoms have been assessed at $100.00 per acre and nearly all lots, whether business or residence, at $75.00 each. The total assessed valuation according to this rating was $69,778.00 in 1914, improvements not being counted. The ruling sale price of the mesa and bottom lands, respectively, is now $750.00 to $800.00 and $500.00, and mesa lands being preferable for residence and the bottom lands for farming.

Little Landers Colony, for which San Ysidro irrigation district furnishes the water supply, was originally laid out in one-acre farms and the occupied holdings are mostly of that area or only a little larger. As an irrigation district San Ysidro district is therefore unique. In its close settlement it has, along with La Mesa, Lemon Grove, and Spring Valley irrigation district, a distinctly municipal character. Water distribution, however, is mainly on an irrigation basis. On the bottom lands 8-inch to 15-inch concrete pipe is used while on the mesa the distributaries are of riveted steel and three inches to twelve inches in diameter. The district builds and maintains a pipe line to each holding. While two distributing reservoirs have been built only the lower one is now needed. Small weirs have been installed on the bottom lands for measuring deliveries to users. Water delivery is in charge of a zanjero and, including his salary and the salary of a powerhouse attendant, and also the monthly power bill, the total monthly cost of managing and operating the district is only a little over $200.00. The district has never defaulted in any payments and has a balance in the bank to care for emergencies. There are now about 140 families resident in the colony.

IMPERIAL.

Imperial district, organized July 14, 1911, by a vote of 1,304 to 360 and containing 523,600 acres, the largest district in the State, is not yet sufficiently advanced in the carrying out of its plans to justify more than a brief comment in this report. The purpose of organizing was to acquire the physical properties of the California Development Company, which now delivers water to Imperial Valley from Colorado River. The character of the present organization of the irrigation system of Imperial Valley is so well understood that it is not necessary to state here more than that the water delivered by the California Development Company is now sold to a number of mutual water companies—seven thus far organized—which in turn deliver it to the irrigators.[1] Under this plan of organization, which was that put into effect by the California Development Company as a part of its general plan for the reclamation of Imperial Valley, there has occurred, as is very well known, a very remarkable change within the period of fifteen years—a change from an absolutely arid waste to an irrigated empire approaching 400,000 acres in area, containing a large number of thriving towns and cities, a population estimated at in excess of 30,000, and an equalized assessment of real property, less improvements, as levied for irrigation district purposes, of over $25,000,000.00. The principal condition immediately leading up to the formation of the district was the bankruptcy of the parent California Development Company and the consequent inability of that company to fulfill its obligations to the various mutual water companies and to the settlers. For a number of years it was evident that the irrigation system of the valley must be fully reorganized and its control in some manner passed to the people of the valley. Many of those holding land for which stock in some one of the mutual water companies had not been purchased, and who were anxious to obtain water for that land, and especially the people centering around the county seat of El Centro, were strongly in favor of the district plan. On the other hand, many of the earlier settlers who paid a substantial amount for mutual water company stock, and more particularly those who have been most closely associated with and the principal beneficiaries of the parent company, believed that reorganization on the mutual plan, possibly involving the organization by the various stockholders of the mutual water companies of a holding company to

[1] A very complete report on irrigation in Imperial Valley, prepared by Mr. C. E. Tait, Irrigation Engineer, Office of Public Roads and Rural Engineering, was printed in 1908 as U. S. Senate Document No. 246, 60th Congress, 1st Session, and can probably be consulted in libraries.

PLATE XV.

Fig. 1.—Typical Farm Scene in Imperial Irrigation District.

Fig. 2.—Young Cotton Furrowed for Irrigation, Imperial Irrigation District.

take over the property of the California Development Company, would be preferable. For some time the controversy between the various factions was earnest and bitter, but as indicated by the vote on organization given above, the proponents of the irrigation district plan greatly outnumbered those who preferred a holding company. Even after the organization of the district the opposition sought to contest the confirmation of its organization in court, but later yielded in the face of a preponderance of opinion against them, so that confirmation by the lower court was accomplished and affirmed by the supreme court. Subsequently the levying of the first assessment was contested in the case of *Imperial Land Company* vs. *Imperial Irrigation District,* but the assessment was sustained by the lower court, from which appeal was taken and is still pending. When, after over three years of study and consideration, the directors of the district, after being petitioned by several hundred more landowners than legally required, representing nearly $4,000,000.00 in valuation in excess of the majority stipulated by the law, submitted to the electors of the district for decision on October 29, 1914, a proposition to issue bonds in the sum of $3,500,000.00 for the purpose of acquiring the works of the California Development Company, a still further effort was made to organize the opposing forces. Even in the town of Imperial, however, which had been the stronghold of the opposition, the majority in favor of the bonds was 132 out of a total vote of 446, while the vote in El Centro precinct was 1,013 in favor of the bonds to 16 against, and in the entire district 3,278 for to 330 against them—a majority of practically ten to one. While many of those who originally opposed the formation of the irrigation district are still of the belief that some other form of organization would have been preferable, further opposition of a substantial character does not now seem likely.

The legal conditions surrounding the acquirement of the works of the California Development Company have thus far prevented the final consummation of the plans of the district to take over those works. The largest interest involved is that of the Southern Pacific Company, which is under agreement with the district to relinquish its claim for the sum of $2,152,500.00 in money or five per cent bonds of the district at par. There are, however, other judgment creditors of the California Development Company, notably the New Liverpool Salt Company, which holds a judgment dated January 10, 1908, in the sum of $458,246.23, with interest from that date. According to a report by the chief engineer and general manager of the district made public by the directors in

June, 1915, the sum of $5,049,554.78 would have been necessary, on July 1, 1915, to pay out of court all outstanding judgments and interest in full, of which $3,772,128.52 represented the interest of the Southern Pacific Company, including their Mexican holdings. Offsetting against this latter amount the price agreed upon between the district and the Southern Pacific Company, $1,277,426.26 remained as the full amount of the claims on July 1 of all other creditors, making $3,429,926.26 the sum to be paid in out of court settlement, if no reduction were to be made in the claim of the judgment creditors other than the Southern Pacific Company. Final adjustment of the matter is, in September, 1915, still awaiting the outcome of an appeal to the supreme court in the case of *Title Insurance and Trust Company* vs. *California Development Company, Southern Pacific Company, New Liverpool Salt Company et al.*, directing the sale as a whole of the properties of the California Development Company, in order to satisfy the various judgments entered. During the continuance of this and other material litigation there has been much difference of opinion among the people of the district as to the best policy to pursue, some holding out strongly for delaying any settlement until the litigation is finally settled, and others maintaining that, even if waiting will result in the district acquiring the properties of the California Development Company at less than their face or the agreed values, the loss due to existing complications in control warrants an immediate settlement on the best terms that can be obtained.

In accordance with its agreement with the Southern Pacific Company looking to the purchase of the works of the California Development Company, Imperial irrigation district sought, and obtained, from the California legislature of 1915 validation of the $3,500,000.00 bond issue authorized October 29, 1914.[1] The legislature also authorized the district to acquire works of the California Development Company and its subsidiary companies and successors in California and Mexico by condemnation or purchase, and in case of purchase, to exchange bonds of the district for all or part of the system, provided that the whole bond exchange should not exceed $3,000,000.00.[2] It might be noted here that a constitutional amendment approved by the people November 3, 1914, permits the purchase by irrigation districts, in certain cases, of the stock

[1]Statutes 1915, chapter 17.

[2]Statutes 1915, chapter 172. A general statute was also passed (Statutes 1915, chapter 507) providing that bonds of irrigation districts authorized by a vote of four-fifths of the electors shall be held valid, and as the $3,500,000 bond issue of Imperial district was carried by more than four-fifths of the electors voting, this act is a further validation of the Imperial bonds. Imperial district bonds were also validated by the superior court of Imperial County, April 6, 1915.

of any foreign corporation owning the part of any international water system situated in a foreign country—in this case the stock of the Mexican company controlling the portion of the property of the California Development Company lying in Mexico. Prior to voting on the bond issue referred to, the proposed works and the proposed purchase of the system of the California Development Company, and the issuance of the bonds, were approved according to law by the State Engineer. When this bond issue was proposed it was expected, as it still is, that the system of the California Development Company, including all outstanding judgments, could be purchased for something less than $3,000,000.00, but $500,000.00 was included in the issue as an emergency fund to take care of possible needed flood protection along Colorado River.

Assessments have been levied in Imperial district from year to year to cover general expenses, the rate having been two mills on the dollar in 1913 and 1914 and seven mills on the dollar in 1915, the latter being intended to yield $153,324.00. The total equalized district assessment for 1915 is $25,768,837.00. It is interesting to note that although a large part of the land in Imperial district is still unpatented, owners of unpatented lands, in spite of the fact that no lien can be attached to such lands through an irrigation district assessment, pay their assessments as readily as those who have patented land. It is fully recognized that land in Imperial Valley is worthless without water, and as the supply when properly distributed is admitted to be ample, there is no hesitancy in the payment of assessments on account of the lack of patent. In making up the district assessment roll the assessor of the district appraises all good farm lands in the district at the rate of $50.00 per acre. Land which it is impracticable to irrigate, or which is too heavily impregnated with alkali to be valuable, is assessed at from $5.00 to $25.00 per acre, and river bottom lands at about $5.00 per acre. Town lots are assessed at county valuations, acreage within the incorporated town limits at $100.00 per acre, and land in unincorporated areas, but in tracts and subdivisions and having maps recorded, at $75.00 per acre.

Lying in Imperial Valley but outside of Imperial irrigation district are large areas of land which would be productive if waters could be supplied. There is some difference of opinion as to the total area in the valley that can ultimately be watered, but there is a general agreement that a considerably larger area than that included in the district will ultimately be brought under irrigation. A petition which, it is said, is

likely to receive favorable consideration by the directors, and which requests the inclusion in the district of about 100,000 acres embraced in a narrow strip east and north of the district extending from the Mexican boundary to the shoreline of Salton Sea, has already been presented to the directors. Part of the land included is now submerged by Salton Sea, but with the recession of its waters this land will become agricultural and the owners of it have signified their willingness to pay a nominal district assessment on it while still under water.

When the plans of Imperial irrigation district to take over the system of the California Development Company are finally consummated, as they undoubtedly must and will be, an interesting question will arise as to the continuance of the present mutual water companies which are distributing the water supplied by the California Development Company. The shareholders of the mutual water companies have in general seemed to hold out for a continuance of distribution through the medium of these companies, which are admittedly very efficiently managed. Water is paid for by the irrigators at fifty cents per acre-foot, which is the price paid by the mutual companies to the California Development Company, the stockholders of the mutual companies, however, paying annual assessments for maintenance and operation in addition to the water charge. A general basis for the settlement of this question has not yet been reached.

Imperial district has gone on record as approving the idea that the affairs of large irrigation districts should be mainly in the hands of a general manager, and they called to that position the man who originally worked out and later carried into effect the organization of the parent promoting company. When originally appointed his salary was fixed at $750.00 per month—the largest salary paid by any irrigation district—but pending the final purchase of the water system by the district the salary of the manager, as well as the salaries of other officers, including the board of directors, have been reduced to a minimum.

COURT DECISIONS AFFECTING CALIFORNIA IRRIGATION DISTRICTS.

The extent of litigation involving California irrigation districts was brought out in the history of activities under the original Wright act. A study of the reported cases in the California supreme and federal courts discloses ninety-one decisions that have construed the original act or the act of 1897 and amendments and supplementary statutes.[1] Many points have been taken up in the decisions. For the first few years attacks on the law were mainly directed against its constitutionality, although in most of the early litigation involving constitutionality many other points were considered. Also, many of the cases hinged on the validity of assessments and on tax sales. The more recent cases have largely involved the collection of interest and principal of bonds of the old districts that were abandoned. The various decisions that have been rendered and the resulting clarification of the district law are quite fully discussed by the standard law writers on irrigation and water rights,[2] but for the benefit of those to whom the standard law books are not available, and in order to present some of the facts of the decisions in brief form, the decisions on a few of the main principles involved, particularly those of especial interest to those contemplating the organization of irrigation districts, are briefly epitomized below.

CONSTITUTIONALITY.

A total of 20 cases have been found involving the constitutionality of the California irrigation district law, of which at least four in the California supreme court and two in the federal courts considered the broad principles of the law. It will be remembered that the Wright act was passed in 1887 and it might be recalled that 30 districts were formed up to and including 1891 and 19 more up to and including 1895. Almost as soon as the early districts were organized opposing owners of large ranches and of town lots within the towns included in the districts sought to defeat the districts by attacking the constitutionality of the law, but by December, 1891, four leading decisions had been handed down by the California supreme court upholding it. In *Turlock Irrigation District* vs. *Williams*,[3] decided May 31, 1888, the act was held constitutional on the ground that a district organized under it was at least a *quasi* public corporation and as such was entitled to levy assessments and condemn property in the manner and for the uses described

[1] A complete list of irrigation district cases in the California supreme court and in the federal courts with subjects dealt with is given in the appendix.

[2] For a general review of decisions reference is made to Wiel, Samuel C., Water Rights in the Western States, 3d ed., 1911, and Kinney, Clesson S., A Treatise on the Law of Irrigation and Water Rights, 2d ed., 1912.

[3] 76 Cal. 360.

in the statute. The same view as to the *quasi* public nature of irrigation districts was taken in *Central Irrigation District* vs. *De Lappe*,[1] in which it was also held that the proceedings for organization should be liberally construed. In *Crall* vs. *Poso Irrigation District*[2] it was further stated that the legislature had power to pass such an act and this same ground was taken *In re Madera Irrigation District*,[3] decided December 14, 1891, which also held among other things that all lands within a district need not be directly benefited by irrigation to constitute a public use. In these decisions the question of the taking of private property for private use and without due process of law were quite conclusively settled, so far as the state courts were concerned, in favor of the law. In the first federal case involving constitutionality, however, that of *Bradley* vs. *Fallbrook Irrigation District*,[4] it was held that the taking of private property to furnish water to land owners alone is not sufficiently a public use, and that the Wright act was invalid as authorizing the taking of private property without due process of law. This adverse decision practically halted for a time all activity under the law, but in the quite celebrated case of *Fallbrook Irrigation District* vs. *Bradley*,[5] decided November 16, 1896, the adverse decision of the lower federal court was reversed and it was held that the provision of the Wright act for confirming or contesting an irrigation district tax brings the proceeding within "due process of law"; that the irrigation of arid lands is a public purpose; and that the irrigation district legislation furnishes ample due process of law and is constitutional. The constitutionality of the Wright act in so far as its general principles are involved has not been questioned since this decision, but both before and after it the constitutionality of certain features of the district law has been questioned and carried to the state and federal courts.[6] So far as adversely affecting constitutionality is concerned the net results of the additional litigation have been decisions that a technical portion of section 4 of the conformation act of 1889,[7] a portion of section 17 of the Wright act as amended in 1893 (authorizing boards of directors, as additional security for the payment of bonds, to pledge by mortgage,

[1] 79 Cal. 351.

[2] 87 Cal. 140.

[3] 92 Cal. 296.

[4] 68 Fed. 948.

[5] 164 U. S. 112.

[6] In addition to cases cited, see *In re Central Irrigation District*, 117 Cal. 382; *Lahman* vs. *Hitch*, 124 Cal. 1; *People* vs. *Linda Vista Irrigation District*, 128 Cal. 477; *Escondido High School District* vs. *Escondido Seminary*, 130 Cal. 128; *Nevada National Bank* vs. *Board of Supervisors of Kern County*, 91 Pac. 122; *Fogg* vs. *Perris Irrigation District*, 154 Cal. 209; *In re South San Joaquin Irrigation District*, 161 Cal. 345; *Imperial Water Company No. 1* vs. *Board of Supervisors of Imperial County*, 162 Cal. 14; *Treyea* vs. *Modesto Irrigation District*, 164 U. S. 179; *Herring* vs. *Modesto Irrigation District*, 95 Fed. 705, and *People ex rel. Brady* vs. *Browns Valley Irrigation District*, 119 Fed. 535.

[7] *Cullen et al.* vs. *The Glendora Water Company*, 113 Cal. 503.

trust deed, or otherwise, all property of the district),[1] and section 4 of the act of 1897 (providing for appeal from the board of supervisors directly to the superior court),[2] all of which sections have since been amended to meet objections raised to them, were unconstitutional.

ORGANIZATION.

The first case in the California supreme court in which the details of the organization of irrigation districts were considered was *Central Irrigation District* vs. *De Lappe*,[3] decided May 31, 1889. It was held in this case that the primary purpose of the organization of an irrigation district is to perform certain important public functions, and that a reasonably liberal rule of construction should be adopted by the courts to carry out the purposes of the law. In *Fallbrook Irrigation District* vs. *Abila*[4] it was held that the term "freeholders owning lands" must be strictly construed to mean owners of land in the general and unqualified sense of the term, so that they may fully appreciate the responsibilities they are about to incur. In *Cullen* vs. *Glendora Water Company*[5] it was held that an agreement between the organizers of an irrigation district and a water company for taking over the system does not render the organization of the district fraudulent if it is not shown that the organizers do not intend to carry out the agreement. In the same case it was held that the inclusion of unpatented railroad land does not make the organization of a district invalid. *In re Central Irrigation District*,[6] it was held that the holders of small residence lots in towns and cities are not such owners of land within the meaning of the Wright act as to make them qualified signers of the original petition for the organization of the district. Instead, it was held that such qualified signers must be *bona fide* owners of agricultural land desiring to improve it by conducting water upon it. In *Fogg* vs. *Perris Irrigation District*[7] it was stated that the fact that a majority of those signing a petition as freeholders were such only temporarily and nominally, on the agreement that land conveyed to them should be reconveyed after the organization, was a fraud. In *Imperial Water Company No. 1* vs. *Board of Supervisors of Imperial County*,[8] decided January 8, 1912, it was held that where town lots are not irrigable and their owners are not eligible as petitioners, they must be rejected; also, that the board of supervisors has power to include within the boundaries of an irrigation district land

[1] *Merchants' National Bank of San Diego* vs. *Escondido Irrigation District*, 144 Cal. 329.
[2] *Chinn et al.* vs. *Superior Court of San Joaquin County*, 156 Cal. 478.
[3] 79 Cal. 351.
[4] 106 Cal. 355, 365.
[5] 113 Cal. 503.
[6] 117 Cal. 382.
[7] 154 Cal. 209.
[8] 162 Cal. 14.

not within the boundaries set out in the petition. In *Herring* vs. *Modesto Irrigation District*[1] it was held, following closely the decision of the United States supreme court in *Fallbrook Irrigation District* vs. *Bradley*,[2] that the question of benefits to be derived from irrigation in a proposed district is to be decided by the county supervisors and that in the absence of fraud or bad faith on their part their decision is conclusive.[3]

ASSESSMENTS.

There have been so many decisions affecting assessments and so many of these have dealt with technical legal matters that no effort will be made to summarize them fully. In general, it may be said that in numerous early cases the broad principle was laid down that the method of making and collecting assessments for irrigation districts need not follow exactly the mode provided for in the constitution for taxation for general state purposes, the distinction being recognized between general taxation and its restrictions and assessments for local improvements;[4] that although an apportionment of expenses for local improvements is to be made according to the benefits received by the property assessed, yet the power to make such apportionment rests on the general power of taxation, and the apportionment itself does not depend upon the fact of local benefit in any other sense than that all taxes are supposed to be based upon the benefit received by the taxpayer;[5] that it is within the power of the legislature to subject state lands to any just liability of the character in question, but the legislature has no such power over the public lands of the United States;[6] and that the board of directors may exercise discretion as to the amount of assessment to be collected, for while its action is subject to the control of the judiciary, and the collection of an assessment may be enjoined in case the board should seek to raise an excessive amount,[7] the courts have no authority to determine the amount to be raised or what proportion of the assessments shall be collected.

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[1] 95 Fed. 705.

[2] 164 U. S. 112.

[3] The decisions on organization have covered many other points than those cited and there have also been additional cases as follows: *In re Bonds of Madera Irrigation District*, 92 Cal. 296; *People* vs. *Perris Irrigation District*, 142 Cal. 601; *Miller vs. Perris Irrigation District et al.*, 85 Fed. 693; 92 Fed. 263; *Perris Irrigation District* vs. *Thompson*, 116 Fed. 832; *Tulare Irrigation District* vs. *Shepard*, 185 U. S. 1.

[4] *Turlock Irrigation District* vs. *Williams*, 76 Cal. 360.

[5] *In re Bonds of Madera Irrigation District*, 92 Cal. 296.

[6] *City of San Diego* vs. *Linda Vista Irrigation District et al.*, 108 Cal. 189.

[7] *Boskowitz et al.* vs. *Thompson et al.*, 144 Cal. 724.

BONDS.

As in the case of assessments, the decisions on irrigation district bonds have been so many and in some cases so technical that a full review of them here is not consistent with the purposes of this report. Therefore, only a few of the main questions brought out in the decision will be referred to. In general, it may be stated that the decisions have covered nearly every phase of the issuance, sale, and redemption of irrigation district bonds, and have necessarily had to do with the validity of district organizations.

In *Cullen* vs. *Glendora Water Company,*[1] decided July 25, 1896, it was held that the language of the Wright act clearly implied that there must be some plan or plans in the alternative before an estimate of costs can be made prior to a bond issue, and that without such plan or plans no real estimates can be made.[2] In *Hughson* vs. *Crane*[3] it was adjudged that the directors of a district have no authority to appropriate the bonds which the electors have voted to issue for the construction of works to the payment of salaries or to expenditures incurred in the management of the property; also that bonds issued to a contractor in payment for the construction of a dam are issued in violation of the statute and can not, in his hands, be valid obligations against the district. In *Stimson* vs. *Alessandro Irrigation District,*[4] decided January 23, 1902, it was held that the board of directors has power to acquire water works by construction, purchase, or condemnation, and to issue bonds of the district in payment therefor, and that the board has no other powers except those expressly given or implied as necessary to carry out the main purposes of the act. In *Baxter* vs. *Vineland Irrigation District,*[5] decided April 3, 1902, it was held that no question of irregularity such as in keeping the records, conducting the elections, failing to advertise the bonds for sale, etc., can be considered when the bonds are in the hands of *bona fide* purchasers or holders for value, without notice of the alleged irregularities. In *Leeman* vs. *Perris Irrigation District,*[6] decided October 9, 1903, it was held that the board of directors has authority to dispose of bonds by only two modes, all others being excluded by plain implication, and that it can not reasonably be said that the power to exchange bonds for warrants issued for construction work is necessarily implied from the express power to exchange bonds in payment for property; also that one who purchases

[1] 113 Cal. 503.

[2] Recent amendments to the act of 1897 which now require a report by the State Engineer as a condition precedent to the calling of bond election are fully referred to in the review of legislation, pp. 48 and 49.

[3] 115 Cal. 404.

[4] 135 Cal. 389.

[5] 136 Cal. 185.

[6] 140 Cal. 540.

bonds knowing that they were negotiated in a manner not authorized by law is not a *bona fide* holder. In *Nevada National Bank* vs. *the Board of Supervisors of Kern County*[1] the California court of appeals for the third district decided that it was well-established that the proper course to pursue when municipalities refuse to pay their bonds is by an action at law to establish the validity of the bonds and the amount due thereon, and then to apply for a writ of mandate to compel the proper authorities to raise what is required to satisfy the debt by assessment and levy provided by statute.[2] In *Stowell* vs. *Rialto Irrigation District*,[3] decided February 17, 1909, it was adjudged that a contract to deliver bonds for water rights and pipe lines is within the law and that bonds issued from time to time for completed portions of an irrigation system are valid; for by the use of the words (in section 15 of the act of 1897) "works constructed and being constructed" the legislature clearly evidenced its intention to authorize districts to negotiate for water systems in advance of their total completion. In *Harelson* vs. *South San Joaquin Irrigation District*,[4] decided by the State court of appeals of the third district on November 8, 1912, it was held that no time is prescribed within which a petition to have land excluded from a district may be filed, and that although a bond issue may have been authorized, no lien and consequent estoppel of the landowner can arise until the bonds have been sold.

In addition to decisions in the State supreme and appellate courts many decisions affecting irrigation district bonds in California have been rendered in the federal courts. In *Miller* vs. *Perris Irrigation District*,[5] decided February 20, 1899, the circuit court for the southern district of California held that bonds issued for "labor and material" are invalid. In *Herring* vs. *Modesto Irrigation District*,[6] decided June 30, 1899, the circuit court for the northern district of California held that the exclusion of lands from a district after organization does not affect an order for a bond issue, provided no bonds have then been sold. In *Thompson* vs. *Perris Irrigation District*[7] the circuit court for the southern district of California held June 11, 1902, that *mandamus* is the proper remedy in the United States circuit court for collecting a judgment obtained therein against a California irrigation district; also

[1] 91 Pac. 122.

[2] In this connection it is well to refer to section 39 of the act of 1897 as amended, which makes it under certain circumstances the duty of the district attorney or the attorney general to take appropriate action for enforcing the levying and collection of assessments.

[3] 155 Cal. 215.

[4] 128 Pac. 1010.

[5] 92 Fed. 263.

[6] 95 Fed. 705.

[7] 116 Fed. 769.

that if the directors fail to make a levy for payment of the bonded obligations, it is the duty of the county supervisors so to do and *mandamus* will lie against them therefor.[1]

CONDEMNATION.

This subject was first under consideration by the California supreme court in *Turlock Irrigation District* vs. *Williams*,[2] decided May 31, 1888, which held that the provisions in the Wright act relative to the condemnation of private property were legal and constitutional. In *Rialto Irrigating District* vs. *Brandon*[3] it was held that a right of way may be condemned for a pipe line, as well as for "ditches and canals," for the term "system of works" is broad enough to include pipe lines, flumes, or other conduits for water.

USE OF WATER OUTSIDE OF DISTRICTS.

In *Hewitt* vs. *San Jacinto and Pleasant Valley Irrigation District et al.*,[4] decided April 3, 1899, it was held that an irrigation district has power to deliver water on lands outside its own territorial confines if it has purchased the property of a water company subject to this burden, and on no just principle can it hold the property discharged therefrom. A municipal corporation may, for proper corporate purposes, both hold property and perform contracts beyond the municipal boundaries. In *Jenison* vs. *Redfield*,[5] decided July 30, 1906, it was held that the ultimate purpose of an irrigation district is the improvement, by irrigation, of the lands within the district, and this precludes the district from allowing water to be taken outside of the district for the irrigation of other lands, even by a landowner within the district who wishes to use his proportionate share of district water on his own lands outside.

INCLUSION OF UNPATENTED GOVERNMENT LANDS.

In *San Diego* vs. *Linda Vista Irrigation District*,[6] it was held that the legislature has no such power over the public lands of the United States as to subject them to liability for assessments in an irrigation district. In *Nevada National Bank* vs. *Poso Irrigation District*[7] it was held that so long as land remains public land of the United States no liability created by the State or an irrigation district can attach thereto. The sale and conveyance by the United States of land within an irrigation district does not operate to charge it with a pre-existing liability

[1] In this connection reference is again made to section 39 of the act of 1897.
[2] 76 Cal. 360.
[3] 103 Cal. 384.
[4] 124 Cal. 186.
[5] 149 Cal. 500.
[6] 108 Cal. 189.
[7] 140 Cal. 344.

not created or assented to by the government or its grantee, and such land is not a part of an irrigation district, is not subject to any lien for district bonds, and is not subject to any assessment for the payment of any debt or liability of the district.

In *Cullen* vs. *Glendora Water Company*[1] it was held that the inclusion of unpatented railroad land does not make the organization of the district invalid.

INCLUSION OF MUNICIPALITIES.

In *Modesto Irrigation District* vs. *Tregea*,[2] it was held that municipalities may properly be included within the boundaries of irrigation districts, for they are indirectly and to a certain extent directly benefited by irrigation, as to the merits of which the judgment of the board is conclusive. Furthermore, every taxpayer receives an allotment of the water proportional to his taxes and this he may use or sell, thus receiving a full equivalent for the tax assessed to him. Again, in *In re Madera Irrigation District*[3] it was held that the inclusion of a town neither renders the act unconstitutional nor invalidates the organization of the district.

INCLUSION AND EXCLUSION OF LANDS.

In *Cullen* vs. *Glendora Water Company*[4] it was held that the board of supervisors has discretionary power as to the inclusion or exclusion of lands and that the only objection that can be raised is as to the abuse of such power, or fraud. In *Imperial Water Company No. 1* vs. *Board of Supervisors of Imperial County*,[5] decided January 8, 1912, it was held that the board of supervisors has power to include within the boundaries of a district land not within the boundaries set out in the petition. In *Central Irrigation District* vs. *De Lappe*[6] it was held that the judgment of the board is final as to the exclusion of lands on the basis of their nonirrigability from the proposed common system of works. In *Modesto Irrigation District* vs. *Tregea*[7] it was held that lands may be excluded from a district after the authorization of a bond issue, provided no bonds have been issued or the holders of outstanding bonds consent. In *Harelson* vs. *South San Joaquin Irrigation District*,[8] decided November 8, 1912, the state court of appeals for the third dis-

[1] 113 Cal. 503.
[2] 88 Cal. 334.
[3] 92 Cal. 296.
[4] 113 Cal. 503.
[5] 162 Cal. 14.
[6] 79 Cal. 351.
[7] 88 Cal. 334.
[8] 128 Pac. 1010.

trict of California held that the term "another source," as used in section 78 of the act of 1897 (in connection with lands entitled to be excluded from an irrigation district) does not necessarily mean another source of works but may mean any source by which the lands are in fact being irrigated, as for instance, a pumping plant; but in order to counteract this decision section 78 was amended in 1911 by adding a proviso at the end that lands irrigated by underground pumped waters and benefited by subirrigation from the irrigation or drainage works of a district can not claim exclusion, although they are not assessable except for principal and interest on bonds if thus irrigated on organization and still exclusively so irrigated each year. In *Herring* vs. *Modesto Irrigation District*[1] the United States circuit court for the northern district of California held that the exclusion of lands from a district after organization does not affect an order for a bond issue, provided no bonds have then been sold.[2]

EFFECT OF ACT OF 1897 ON DISTRICTS PREVIOUSLY ORGANIZED.

This question has been adjudicated by the federal courts only. In *Herring* vs. *Modesto Irrigation District*,[3] decided June 30, 1899, it was held by the circuit court for the northern district of California that no contract, obligation, lien, or charge incurred by an irrigation district prior to 1897 was affected, impaired, or discharged by any of the provisions of the act of 1897, but such liabilities were expressly continued in section 109 thereof. In *Board of Supervisors of Riverside County* vs. *Thompson*,[4] decided May 11, 1903, it was held by the circuit court of appeals for the ninth circuit on error to the circuit court for the southern district of California that the act of 1897 applies to all existing irrigation districts, no matter when organized, for it recognizes the existence and validity of districts theretofore organized and makes them subject to the provisions of the act so far as applicable.

[1] 95 Fed. 705.

[2] For an additional case on inclusion of lands, see *Central Irrigation District* vs. *De Lappe et al.*, 79 Cal. 351.

[3] 95 Fed. 705.

[4] 122 Fed 860.

SUMMARY AND CONCLUSIONS.

1. The original Wright irrigation district act and the amended act of 1897 have together been on the statute books of California for twenty-eight years and during this time, and in spite of many early mistakes and failures, some of which resulted in entire or partial repudiation of bonded indebtedness, the district form of irrigation organization has become an established California institution as to the effectiveness and success of which there can no longer be any question. No irrigation district organized under the amended act of 1897, or since reorganization under that act, has defaulted in the payment when due of either principal or interest of any bonded indebtedness.

2. Failures under the original act of 1887 may, in the main, be attributed to one or more of the following conditions or causes:

(*a*) Lack of any provision for State control or supervision through which the organization of unwise and infeasible districts could be prevented by the State government.

(*b*) The granting of too large a measure of power to minority landowners in the matter of initiating district projects, resulting in the formation of a number of districts in which the majority of the established substantial interests was opposed to such organization; also, resulting in some cases in the formation of districts by a relatively few occupants of desert holdings who in no way represented the interests of those who ultimately would have had to pay for the district improvements had the project been successful.

(*c*) Absence of some proper limitation on the power of districts to create debt without the assent of those representing at least a majority of the property to be charged with the debt. This lack resulted in many cases in the voting and issuance of bonds far in excess of amounts conditions at the time justified, inevitably arousing bitter opposition on the part of the large landowners.

(*d*) In the case of a considerable number of the districts organized, a too strongly speculative attitude on the part both of the promoters and organizers of such districts and of those who purchased the bonds that were issued.

(*e*) Lack of data as to water supply and construction costs, resulting in engineering mistakes that even a small measure of public control should now be able to prevent.

(*f*) In a few cases, willingness of engineers of repute to report favorably on district projects for which there was no physical justification and for which, in some cases, there was no moral justification.

(*g*) Misconception by many of the purposes of the district law and of the extent of the power over riparian rights granted by it to nonriparian owners.

(*h*) Excessive optimism of the period of greatest activity under the law, followed by the industrial panic of 1893, during which feasible projects in some cases met the same fate as those that were not feasible.

(*i*) General attack on the principles of the law under financial support of a number of both large and small landowners who were convinced by shrewd attorneys that the Wright act could be proven unconstitutional and debts incurred under it thereby be invalidated.

(*j*) In some cases, failure of the organizers of districts to give due regard to economic feasibility at the time the projects were undertaken.

3. Forty-nine irrigation districts were organized under the original Wright act. Of these, twenty-four disorganized or were abandoned prior to any substantial activity and without the issuance of any bonds. One (Walnut) never issued any bonds but has been continuously successful from the start.

4. Of the twenty-four of the old districts that issued bonds, nine were essentially speculative, five were bona fide but clearly unwise, one large one was bona fide and entirely feasible physically but was unsupported by a sufficient public opinion to justify it at the time organized, four simply failed of success, and seven, including two classed as speculative when organized, are now operating. Sixteen of the twenty-four have effected a financial settlement and bond suits are pending in three others.

5. Of the eight districts organized under the original Wright act that are operating in 1915, Modesto, Turlock, and Alta have most completely made use of the financial and administrative provisions of the district law and are unquestionably successful. Browns Valley and Tulare districts have entirely eliminated their bonded indebtedness, according to the terms of settlement agreed on with their bondholders, and are now operated on a tolls basis with conditions having reached stability in Tulare district. Little Rock Creek district has recently refunded its original bonded indebtedness on a compromise basis and has rehabilitated and greatly improved its water system out of the proceeds of an additional small bond issue. Big Rock Creek district has recently been restarted under the auspices of a socialist colony and settlement suits covering the old bonds are pending. Walnut district continues to run successfully as an agency for the ownership and operation, on a tolls basis, of the small area included.

6. Nine irrigation districts have been organized under the act of 1897 and its amendments. Of these, South San Joaquin, Oakdale, and San Ysidro have mainly completed construction. Imperial has voted the necessary bonds and will take over the system of the California Development Company as soon as certain preliminary uncertainties are cleared up; Anderson-Cottonwood and La Mesa, Lemon Grove, and Spring

Valley have laid out or have agreed to purchase works and have voted bonds therefor, and Waterford, Alpaugh, and Black Rock have not yet determined upon procedure for acquiring a water supply and distributing works.

7. The original Wright act of 1887, as re-enacted in 1897 and amended from time to time since then, has proven to be a workable and generally satisfactory measure, the amended law having corrected the chief defects and supplied some of the essential omissions of the earlier law, as well as having added several entirely new features designed to give the State government a larger responsibility in aiding and watching irrigation districts under the broad theory that irrigation districts are in some measure agencies of the State in furthering irrigation development. It seems quite evident, however, that further improvement is possible, in part as suggested below.

8. The present provision of the California irrigation district act requiring a report by the State Engineer on proposed districts prior to their organization might well be amended to require a careful investigation and physical examination by the State Engineer prior to report, instead of merely requiring a somewhat negative report, as at present; and to make this possible it would seem that the State Engineer should be allowed such reasonable time as he might require, instead of the present thirty days, in which to make his examination and report.

9. Operation of the existing law providing for a report by the irrigation district bond commission on district bond issues has materially strengthened the financial status of approved California irrigation districts and resulted in a definite improvement in irrigation district construction. It is believed, however, that the absence of any control by the State over the expenditure of the proceeds of bond sales where the issuance of the bonds has been approved by the bond commission is unfair both to the State and the investing public, and that consequently the present law should be amended to require approval by the State Engineer of all work done with the proceeds of approved bond issues.

10. The measure of control and supervision that should be exercised by the State over irrigation districts is admittedly subject to argument. In the opinion of the writer, however, the weight of argument, in the case of California, is on the side of strengthening and enlarging the measure of control and supervision now exercised, both as suggested in paragraphs 8 and 9 above, and to give the State Engineer at least advisory jurisdiction over the financial operations of irrigation districts, to the end that efficiency in irrigation districts shall be increased, and the security of bondholders strengthened. In this latter connection it is suggested that the State might well provide an as nearly as possible

uniform system of irrigation district accounting, for use especially during construction, but also in connection with operation and maintenance.

11. An annual conference of irrigation district officials to be called by the State Engineer, would, it is believed, work for a more uniform and a better administration of organized irrigation districts, and might lessen the now too-frequent amendment of the district law to meet special conditions in particular districts. The connection of the State Engineer with such a conference might inject into its deliberations the viewpoint of the public, which viewpoint has been almost wholly lacking in legislation framed and submitted to the legislature by the districts themselves. Such a conference might, for instance, among numerous other matters, well consider the wide variation in the levying of irrigation district assessments, to which attention is called in the discussions of the present status of existing districts.

12. The growing tendency in some districts toward employing a competent irrigation district manager who shall, subject to the board of directors, have full control of the district business, seems to be in line with a better business administration, and for that reason is to be strongly commended. There is a feeling in some of the districts that the present per diem system of compensating members of boards of directors for time devoted to district business is responsible for some of the directors giving much time to matters that might more properly be dealt with by a general manager; also that in addition to increasing the cost of administration, by their doing so, the willingness of individual directors to deal with such matters is quite apt to weaken the authority of the engineer or superintendent and thus make his task the more difficult. A remedy for this condition might be found in a board of three, instead of five, directors, the members to receive regular annual salaries commensurate with the time devoted by them to district business.

13. The recent great interest in California in the irrigation district form of organization justifies such careful watchfulness by the State as will prevent unduly rapid irrigation district expansion, in advance of real economic justification.

14. The main problem before several of the districts recently organized is to obtain settlers for the lands for which water has been made available, and one of the most prevalent deterrents to rapid settlement would seem to be the high prices asked for land. Unfortunately, no wholly satisfactory method has yet been devised for preventing undue speculation in land in irrigation districts, along with that on projects of other forms, based on the making of irrigation water available. If the experience of the last decade is to profit recently-formed irrigation

districts in California, it is believed that the prevention of land speculation, as well as the other problems of modern land settlement, must be given careful consideration by them as districts, instead of leaving such matters wholly to individuals, as in the past. There is no apparent reason why irrigation districts should not and could not enter into agreements with the owners of lands within such districts that are open for colonization providing for the sale of such lands to settlers at an agreed price, and under such conditions and terms of payment as might be mutually determined to be satisfactory to the seller and within the means of the purchaser. An amendment to the district law permitting irrigation districts to enter into such agreements might open to irrigation districts a new way of helping themselves to attain a more rapid development and success.

APPENDIX

I.

STATISTICAL LIST OF IRRIGATION DISTRICTS

Districts organized	County or counties in which located	Year organized	Area, acres (in most cases, approximate)	Bonded indebtedness incurred
Happy Valley	Shasta	1891		None
Orland	Glenn (formerly Colusa)	1887		None
Kraft	Tehama and Glenn (formerly Tehama and Colusa)	1888	13,000	None
Orland Southside.	Glenn (formerly Colusa)	1888	25,000	None
Central	Colusa	1887	156,550	About $570,000
Colusa	Colusa	1888	105,000	None
Browns Valley	Yuba	1888	44,328	$140,000
Modesto	Stanislaus	1887	81,143 (now 81,183)	Original $1,150,000; funding, $1,341,511; and $256,000 additional to Jan. 1, 1915. Later, $610,000. Total now outstanding $1,605,511.

ORGANIZED UNDER THE WRIGHT ACT OF 1887.

Extent of operations	Basis of financial settlement
Accomplished nothing and soon abandoned. Replaced by small co-operative company.	On order of superior court in 1902 supervisors levied assessment sufficient to meet judgment covering all debts left.
Accomplished nothing and soon abandoned.	Left no indebtedness.
Organization and bond issue of $80,000 confirmed, but soon abandoned owing to general discouragement and internal dissensions. Later most of land petitioned out of district.	All indebtedness paid by voluntary assessment.
Made surveys and voted $200,000 bonds which declared void prior to issue. Abandoned when opposition gained control.	All indebtedness paid by voluntary assessment.
Operated several years, built about 40 miles of canal, ceased work about 1892 due to inability to sell bonds, and finally declared illegally organized by supreme court in 1897. Works leased in 1903, lease now being held by Sacramento Valley Irrigation Company and its successors. Landowners in old district recently held by supreme court to have preferential right to water in Central canal.	Bonds mostly bought by Sacramento Valley Irrigation Company at reported price of 35 cents on dollar and held as protection for lands purchased in district by it. Suits involving validity of bonds never prosecuted to conclusion. Company made compromise with some landowners.
Accomplished nothing and disorganized in 1893 by vote of 208 to 18.	Left no indebtedness.
Built headworks in North Yuba River, 9 miles of flume, 25 miles of main canal, and some laterals, which made water available to about 4,500 acres. Inactive for a number of years due to litigation, but finally declared legal by United States court in 1905. Now operated under contract with power company and by water tolls.	Bonds and interest coupons compromised in 1906 at 30 cents on dollar.
By July 1, 1895, built dam, headworks, 9,000 feet flume and earthworks down to district line. Inactive next 7 years. Rehabilitated 1902, works extended, and now active and successful, 52,381 acres being irrigated in 1914.	Original indebtedness funded in 1902 dollar for dollar less refund of 5 years' interest on funding bonds. All obligations since funding paid in full as due.

STATISTICAL LIST OF IRRIGATION DISTRICTS ORGAN

Districts organized	County or counties in which located	Year organized	Area, acres (in most cases, approximate)	Bonded indebtedness incurred
Turlock	Stanislaus and Merced	1887	176,210 (now 175,566)	Original $1,170,000; funding, $1,156,000; additional to Jan. 1, 1915, $1,416,800; total now outstanding $2,572,800.
Madera	Madera (formerly Fresno)	1888	280,000	None
Sunset	Fresno and Kings	1891	318,500	At least $329,500
Huron	Fresno	1892	25,000	None
Selma	Fresno	1890	200,000	None
Alta	Tulare, Fresno, and Kings.	1888	130,000	Original, $543,000; funding about $480,000.
Tulare	Tulare	1889	39,360	$500,000
Tipton	Tulare	1891	17,000	$50,000

IZED UNDER THE WRIGHT ACT OF 1887—Continued.

Extent of operations	Basis of financial settlement
Construction periodically under way to 1901 and system largely completed. After long litigation bonds finally held valid in 1901 and reorganization and rehabilitation of system rapidly followed. Now active and successful.	Original indebtedness funded in 1902 on basis of 80.5 cents on the dollar. All obligations since funding paid in full as due.
Surveys made and $850,000 bond issue voted. Sought to purchase Madera canal system but unsuccessful. Owing to litigation and discouragement finally voted 166 to 14 to disorganize; dissolved by court April 18, 1896.	All indebtedness paid from time to time by assessments.
Voted $2,000,000 bond issue, made survey; traded $329,500 in bonds for water rights, rights of way, and services. Obtained decree of confirmation by fraud, which finally set aside and district declared null and void.	No settlement made or known to be contemplated.
Accomplished nothing and soon abandoned.	No record of any indebtedness.
Organized to take over existing canals but three efforts to vote bonds failed and activities practically ceased in 1891 although kept alive and assessments levied for several years thereafter.	Running expenses paid from annual assessments; no debts left unpaid.
Exchanged $410,000 in bonds for '76 Canal and spent $133,000 for laterals. In litigation and other trouble to compromise in 1901, but never inactive. In later years system considerably improved and district now active and successful.	In order to stop litigation against the district and to aid and encourage the district, bondholders consented in 1901 to refund at 25 per cent discount.
Exchanged $250,000 in bonds for Kaweah and Settlers canals, and constructed connecting canal and laterals. Practically inactive and in much litigation 1895 to 1903, but again became active after compromise, and now successful. Now operated mostly by water tolls.	Original indebtedness, not including bond interest, compromised in 1902, mostly at 50 cents on dollar, money being raised by voluntary assessment and subscription.
Contracted for a completed system for practically entire bond issue, and this system, covering the entire area in district, was built. But when diversion of water attempted district permanently enjoined from taking any and district abandoned.	Indebtedness, not including paid interest, compromised in 1911 at average of 72 cents on dollar, money being raised by assessment of about 25 cents on $100 levied by supervisors.

STATISTICAL LIST OF IRRIGATION DISTRICTS ORGAN

Districts organized	County or counties in which located	Year organized	Area, acres (in most cases, approximate)	Bonded indebtedness incurred
Tule River	Tulare	1891	22,000	$100,000
Kern and Tulare	Kern and Tulare	1889	40,000	None
Poso	Kern	1888	40,000	$500,000
Neenach	Los Angeles	1893	3,840	None
Amargoza	Los Angeles	1895	5,000	None
Palmdale	Los Angeles	1890	50,000	None
Manzana	Los Angeles	1891	3,000	About $40,000
Little Rock Creek.	Los Angeles	1892	4,200 (including 1,300 acres government land not properly part of district)	Original, $88,000; later (for funding and reconstruction) $60,000.

IZED UNDER THE WRIGHT ACT OF 1887—Continued.

Extent of operations	Basis of financial settlement
Built dam in Tule River and reconstructed several existing systems, and when ready to distribute water injunction suits brought to restrain diversions by district and injunction granted December, 1898. Water delivered several years but district soon went in state of stagnation and remained so until compromise. District disorganized January 20, 1913. Works built still in use by landowners.	Indebtedness, not including bond interest, compromised in 1904 at 50 cents on dollar, money being raised by district assessment voluntarily paid. Outstanding warrants, although long outlawed, also paid.
Voted $500,000 in bonds, but none issued. Spent about $40,000 in surveys, rights of way, and other preliminary expenses. Realizing injunction would be brought to prevent diversion from Kern River, voted to disorganize in 1896.	All money spent raised by assessments. After disorganization balance of $900 prorated among taxpayers.
After disposing of $60,000 in bonds contracted for a completed system from Poso Creek for remaining $440,000 voted. After partial completion of an inferior system realized no water available from Poso Creek and district abandoned.	Bonds mostly acquired by an investment company and land being released from bond liability by payment of $11 per acre, 16,715 acres having been so released by November, 1914.
Never active	No record of any indebtedness.
Made surveys but soon abandoned	Expenses of organization and surveys paid by those most active.
Voted $175,000 bonds and did a little work looking to diversion from Little Rock Creek. Organization held null and void July 10, 1891, and abandoned. Some little development since by other parties.	No bonds issued. Outstanding warrants never paid.
Part of a land-selling scheme and accomplished nothing because no water available. Bonds traded for alleged water rights and part of a system. Abandoned early.	Several settlements proposed but none yet worked out.
Traded most of bonds disposed of to promoting company for water rights and construction. Little activity 1895 to about 1910 when compromise effected. Works reconstructed 1914–15 at cost of $35,000 in new bonds.	Old bond issue traded 1914 for $25,000 in new bonds.

STATISTICAL LIST OF IRRIGATION DISTRICTS ORGAN

Districts organized	County or counties in which located	Year organized	Area, acres (in most cases, approximate)	Bonded indebtedness incurred
Big Rock Creek	Los Angeles	1890	30,000	In excess of $223,000.
Santa Gertrudes	Los Angeles	1890	2,000	None
Vineland	Los Angeles	1889	4,000	$62,000
Glendora	Los Angeles	1892	3,000	None
Pomona Orange Belt.	Los Angeles	1890	4,000	$2,000
Strong	Los Angeles	1893	900	None
Walnut	Los Angeles	1893	869¾	None
Rialto	San Bernardino	1890	7,200	About $411,000

IZED UNDER THE WRIGHT ACT OF 1887—Continued.

Extent of operations	Basis of financial settlement
Traded $150,000 bonds for water rights and ditch, partly going to promoting company. Additional bonds issued for miscellaneous expenses and additional water development. Abandoned because of no water. Small acreage now being irrigated.	No settlement. Suit on bonds pending November, 1914.
Voted $55,000 bonds, but unable to sell any. Lost water rights while waiting. Disorganized September 16, 1899.	Old warrants, long outlawed, paid 50 cents on dollar.
Traded $10,000 for water rights and spent $50,000 in cash and bonds tunneling for water but were enjoined from using the water developed, but about 100 inches obtained from well in district. Complete default since 1894. About 2,000 acres now being irrigated by small unincorporated company and district abandoned.	No settlement made or known to be contemplated October, 1914. Has about $1,500 still in treasury.
Voted $170,000 bonds, but none issued. District formed to take over Glendora Water Company and obtain additional supply from tunnels. Controversy over agreement followed by litigation in which bonds finally were declared illegal in 1896. Prior to this district abandoned and mutual company formed.	No record of any indebtedness.
Voted $200,000 bonds. Traded the $2,000 issued for water rights which yielded one-tenth supposed supply. Plans abandoned early but district not disorganized until 1897. Land now irrigated from wells.	Indebtedness paid in full by voluntary subscription.
Organized chiefly to get power of condemnation. Disputed water rights finally settled favorably and district activity ceased 1898.	Left no indebtedness.
Formed to reorganize and operate an existing ditch system. Has been continuously active and successful.	No settlement necessary; has always paid bills.
Organized to help sell land. Traded bonds disposed of to promoting company for supposed water right and a pipe system to be built. About 75 miles of pipe finally built and about 660 inches of water developed. With dry years water failed, and mutual company formed to operate system.	Over $200,000 of old bonds purchased at 12 to 25 cents on dollar by mutual company now operating system. Numerous suits and appeals on remaining bonds now pending, including appeals on judgments aggregating about $192,000.

STATISTICAL LIST OF IRRIGATION DISTRICTS ORGAN

Districts organized	County or counties in which located	Year organized	Area, acres (in most cases, approximate)	Bonded indebtedness incurred
Olive	San Bernardino	1893	900	None
Citrus Belt	San Bernardino	1890	11,700 (afterwards reduced to 2,450)	None
Grapeland	San Bernardino	1890	10,787	About $129,000
East Riverside	San Bernardino and Riverside.	1890	2,690	About $237,000
Alessandro	Riverside	1891	25,500	$765,000
Elsinore	Riverside	1889	15,000	None
Perris	Riverside	1890	25,000	Probably more than $400,000.
Murrieta	Riverside	1890	14,000	None

IZED UNDER THE WRIGHT ACT OF 1887—Continued.

Extent of operations	Basis of financial settlement
Voted $60,000 bonds to develop artesian water. After confirmation of bonds organizers decided to proceed differently and district disorganized.	Left no indebtedness.
Organized as adjunct to sale of lands. Trusteed $780,000 in bonds to cover development of water by promoting company and on failure of company bonds returned. Built about 1¼ miles ditch with warrants. Disorganized May 1, 1897. About 2,000 acres now watered.	All debts, mostly warrants, paid 50 cents on dollar.
Tapped underflow of Lytle Creek and built 10 to 15 miles of ditches. Organization held valid but lost supposed water rights and ceased activity. Small area now supplied by development company.	No settlement yet. Suits over bonds pending. One judgment for $4,400 now on appeal to supreme court.
Developed some water from wells, purchased a pipe line for about $100,000 and built other works, mostly paid for in bonds. Reorganized into Riverside Heights Mutual Water Company and over $200,000 spent for betterments. Land all irrigated now.	Mutual company purchased most of bonds at about 25 to 50 cents on dollar. Bonds for $19,000 held invalid in federal court. A few bonds not yet located. Mutual company became responsible for all indebtedness.
Promoted by land and water company, to which it traded all of its bonds for "class B" water rights, the water system to remain the property of the promoting company. Part of the system agreed upon was built, but the company and the water supply both failed and district abandoned. District declared illegal.	No settlement. Bonds held void and bondholders declared to have had notice of illegality of issue. Final judgment acquiesced in by bondholders and bonds burned.
Investigated water supplies and voted $450,000 in bonds to buy "water rights" but abandoned before issuing bonds owing to doubt as to ability to obtain water, and later dissolved by consent.	All indebtedness paid.
Voted $442,000 in bonds. Traded $240,000 in bonds for "class B" water rights and used nearly $200,000 in bonds in constructing distributing system in district. Promoting company and water supply failed and district abandoned.	In May, 1915, compromised claims on bonds and coupons, partly reduced to judgments, on basis of about 40 cents on dollar. Assumed that no further settlement likely on ground that bonds and coupons not sued on prior to January 1, 1915, have outlawed.
Looked for water in desultory way and bored one well but was dissolved about five years after organization with nothing accomplished.	All indebtedness paid.

STATISTICAL LIST OF IRRIGATION DISTRICTS ORGAN

Districts organized	County or counties in which located	Year organized	Area, acres (in most cases, approximate)	Bonded indebtedness incurred
San Jacinto and Pleasant Valley.	Riverside	1891	18,000	$225,250
Riverside Heights.	Riverside	1891	1,400	None
Anaheim	Orange	1889	83,000	None
Escondido	San Diego	1889	12,814	$350,000
Fallbrook	San Diego	1891	12,000	None
Linda Vista	San Diego	1891	42,600	$176,000
Jamacha	San Diego	1891	22,000	$111,000
San Marcos	San Diego	1891	10,000	None
Otay	San Diego	1891	44,000	None

IZED UNDER THE WRIGHT ACT OF 1887—Continued.

Extent of operations	Basis of financial settlement
Voted $350,000 in bonds. Traded part for water rights and other property and sold some. Built 3 miles flume, 18 miles main and 12 miles lateral ditches. Irrigated a few hundred acres. Found water and system inadequate and district declared void and abandoned.	No settlement. Some bond claims reduced to judgments, but these not satisfied, and no settlement plan known to be pending. District said to consider itself only liable for about $65,000 of bonds sold for cash.
Voted $300,000 in bonds but none issued. Spent about $3,000 for general expenses and about $15,000 developing water. Found not feasible and abandoned.	All debts paid before district abandoned.
Voted $600,000 in bonds and proposed to take over and improve local systems, but finally abandoned and dissolved September 12, 1895.	All debts paid before dissolution.
Built dam, tunnels, flumes, and ditches and distributed water to about 1,000 acres. Then changed to mutual company and since operated as such. Dissolved.	Compromised by paying bondholder $200,000 and interest thereon for a few months in full settlement of claims aggregating $498,365 on January 1, 1905.
Voted $400,000 in bonds but sold none and did nothing beyond preliminary investigation. Declared not legally organized.	No record of having left any indebtedness.
Voted $1,000,000 in bonds. Traded most of those disposed of to the promoters for supposed water properties and paid $10,000 for certain water rights. Dissolved April 15, 1914.	Exchanged water properties originally acquired with $176,000 in bonds for $55,000 of old bonds and compromised remainder of the debt for $125,000 raised by district assessment in 1913 and 1914.
Voted $700,000 in bonds. Purchased Barrett dam site and related water rights for $105,000 in bonds. Adverse conditions resulted in abandonment. Subsequently all property acquired exchanged for all outstanding bonds and warrants and district dissolved May 5, 1909.	All debts paid before dissolution. (See preceding column.)
Voted $350,000 in bonds but after examination of probable cost was voted to disorganize. Dissolved by court October 4, 1893.	All indebtedness paid before dissolution.
Proposed to utilize Moreno dam site, but got into litigation and abandoned. Incurred expenses to amount of about $6,000. Levied one assessment of $9,000 but this held invalid. Voted to dissolve in 1894 but dissolution not allowed because of outstanding debts.	No settlement. All debts outlawed.

II.

LIST OF IRRIGATION DISTRICTS PROPOSED UNDER THE ORIGINAL WRIGHT ACT FOR WHICH ORGANIZATION WAS NEVER COMPLETED.

Records of the old Wright act districts disclose a number of attempts to form districts that were not successful. In some cases the petitions to the supervisors were denied; in other cases they were withdrawn. In at least one case there has been merely a confusion of names. As some of these proposed districts have occasionally been referred to as districts that were fully organized, a list of them, together with statements of essential facts regarding them, is included herewith:

Spring Valley (San Diego County).—This was merely the name originally proposed for Jamacha district.

Oceanside Coast (San Diego County).—Petition filed September 12, 1891; denied October 5, 1891.

Azusa (Los Angeles County).—Petitions filed April 1, 1889, June 10, 1889, and at one later time. At one election on the proposal to organize 181 voted "Yes" and 111 "No." Plan definitely abandoned July 28, 1890.

Downey (Los Angeles County).—Petition filed January 5, 1888. Remonstrance filed January 20, 1888. Dropped.

Alhambra (Los Angeles County).—Petition filed August 3, 1889. Approved by supervisors but withdrawn at request of petitioners.

Acton (Los Angeles County).—Petition filed December 26, 1892. Protest filed saying project would bond lands included for one-half of their value and that the promoters would get the benefit. Petition dismissed April 19, 1893.

Delhesa (Los Angeles County).—Petition filed March 9, 1891; denied April 3, 1891.

Willows (Colusa County).—Petition filed December 8, 1887. Organization defeated at election January 14, 1888, vote standing 88 for and 48 against. As originally proposed this district included some land in Orland Southside district but this was excluded prior to the election.

College (Colusa County).—Petition filed May 7, 1888. Organization defeated by vote of 74 to 43 at election held June 18, 1888. Covered land near College City southeast of Colusa, water to be taken from Sacramento River.

Pierce (Colusa County).—Petition filed August 6, 1888. Covered land south of Willows. Organization defeated September 8, 1888, by vote of 61 to 34.

Kirkwood (Tehama County).—Petition filed December 24, 1889. Water for district to be obtained from Toms Creek. Organization defeated by vote of 20 to 39 January 20, 1890.

III.

LIST OF IRRIGATION DISTRICT CASES AFFECTING CALIFORNIA IRRIGATION DISTRICTS AND SUBJECTS DEALT WITH IN DECISIONS.

Turlock Irrigation District vs. Williams, 76 Cal. 360, May 31, 1888: Constitutionality; public nature of irrigation districts; assessments; condemnation.

Central Irrigation District vs. De Lappe et al., 79 Cal. 351, May 31, 1889: Bonds; constitutionality; public nature of irrigation districts; organization; construction of law; petition; sufficiency of bond; meeting of board; publication of petition; establishment of boundaries; publication of election proclamation; establishment of voting precincts; form of bonds.

Crall vs. Board of Directors of Poso Irrigation District, 87 Cal. 140, December 15, 1890: Constitutionality; public nature of irrigation districts; bonds; confirmation proceedings; jurisdiction of court therein; service of process.

Board of Directors of Modesto Irrigation District vs. Tregea, 88 Cal. 334, March 19, 1891: Bonds; confirmation proceedings; publication of notice of petition; contents of notice; jurisdiction of court after amending petition; inclusion of city lands; sale of allotted water; judgment of board on inclusion; materiality of evidence of fraud; exclusion of lands; reintroduction of evidence; notice of election; time of commencing proceeding; effect of exclusion on subsequent bonds.

Palmdale Irrigation District et al. vs. Rathke et al., 91 Cal. 538, October 14, 1891: Bonds; confirmation proceedings; appeal; notice of entry of judgment; estoppel by stipulation.

In re Bonds of Madera Irrigation District, 92 Cal. 296, December 14, 1891: Constitutionality; public use; organization of public corporations; public nature of irrigation districts; taxation; assessments for local improvements; sufficiency of bond accompanying petition; sufficiency of boundary description; proof of presentation of petition; form of bonds; inclusion of municipality.

People vs. Turnbull, 93 Cal. 630, March 17, 1892: Attempted bribery; scope of "Trustee" in Penal Code; allegation of *quasi* public nature of corporation.

Tregea vs. Owens, 94 Cal. 317, April 11, 1892: Assessment; taxation; authorization of assessment by electors.

People vs. Selma Irrigation District, 98 Cal. 206, May 4, 1893: Public nature of irrigation districts; dissolution for nonuser of franchise.

Sanford vs. East Riverside Irrigation District, 101 Cal. 275, February 7, 1894: Contract; damages; findings on conflicting evidence; ascertainment of profit.

Quint vs. McMullen, 103 Cal. 381, July 20, 1894: Quieting title; delinquent tax sale; erroneous decree; status of ownership.

Rialto Irrigating District vs. Brandon et al., 103 Cal. 384, July 20, 1894: Condemnation; authority to construct pipe line; confirmation proceeding.

Quint vs. Hoffman et al., 103 Cal. 506, August 8, 1894: Assessments; *de jure* or *de facto* character of district; collateral attack on validity of organization; payment of just tax.

Woodruff et al. vs. Perry et al., 103 Cal. 611, August 25, 1894: Assessment; authorization by electors.

Directors of Fallbrook Irrigation District vs. Abila, 106 Cal. 355, 365, March 11, 1895: Confirmation proceedings; qualifications of signers of petition for organization; tenant in common; married woman holding community property as signer; holder of certificate of purchase from state for school land partly paid for as signer; issues in new trial; time of opening and closing polls; burden of proof in confirmation proceedings; bonds; entry on minutes of board; rescission of resolution for bond issue.

First National Bank of Bridgeport, Ohio, vs. Perris Irrigation District et al., 107 Cal. 55, April 5, 1895: Notice by materialman; assignment by contractor; rights of *bona fide* assignee; voidability of executed contract; filing of notice of claim; entirety of contract; value of patterns; counterclaim; setoff.

City of San Diego vs. Linda Vista Irrigation District et al., 108 Cal. 189, July 19, 1895: Assessment and taxation; pueblo lands of city; state lands; government lands.

Fudickar vs. East Riverside Irrigation District, 109 Cal. 29, September 5, 1895: Allegation of ownership; real property character of water right; president of corporation as grantor and grantee; voidability of unauthorized conveyance; enforcement of voidable contract against assignee.

Cooper vs. Miller et al., 113 Cal. 238, June 6, 1896: Assessment; sale; assessment of several lots in one parcel; double levy in one order; tax deed as evidence of election; recital of election in order of board; materiality of allegation of payment.

Cullen et al. vs. The Glendora Water Company, 113 Cal. 503. July 25, 1896: Confirmation proceedings; plans and estimates; constitutionality of act of 1889; sufficiency of boundary description; inclusion and exclusion of land; divisions in district; election of directors; fraud in organization; inclusion of railroad lands.

Hughson et al. vs. Crane, 115 Cal. 404, December 18, 1896: Bonds; assessments; discretion of board in making levy; *bona fides* of bondholders; district as party in action to vacate assessment.

Boehmer vs. Big Rock Irrigation District et al., 117 Cal. 19, May 14, 1897: Proof of ownership; riparian rights; percolating waters; procedure for new trial; right of district to sue and be sued.

Wilson et al. vs. Carter, 117 Cal. 53, May 21, 1897: Assessment; sale; liability of former collector.

In re Organization and Bonds of the Central Irrigation District, 117 Cal. 382, June 24, 1897: Confirmation act; special proceeding; weight of prior decision; finality of supervisors' decision; constitutionality; publication of notice of presenting petition; freeholders; owners of town lots as petitioners; bonds; rights of *bona fide* bondholders.

Carter vs. Tilghman, 119 Cal. 104, November 24, 1897: Warrants, assessments; division into funds.

Mitchell vs. Patterson, 120 Cal. 286, March 15, 1898: Warrants; clerical errors in findings; statutory funds of district; liability for salaries and expenses.

Lahman et al. vs. Hatch, 124 Cal. 1, March 9, 1899: Assessments; description in assessment book; alterations by board of equalization; constitutionality; notice of levy.

Hewitt et al. vs. San Jacinto and Pleasant Valley Irrigation District et al., 124 Cal. 186, April 3, 1899: Water rights; delivery of water; usage in community; proof of land ownership; assumption of contracts by district; delivery of water outside district; introduction of evidence; damages to crops.

People ex rel. Stone vs. Jefferds et al., 126 Cal. 296, October 12, 1899: Dismissal of action; laches of irrigation district; discretion of judge.

East Riverside Irrigation District vs. Holcomb et al., 126 Cal. 315, October 18, 1899: Proper parties; intervention; cross-complaint on new cause of action.

Vineland Irrigation District vs. Azusa Irrigating Company et al., 126 Cal. 486, October 28, 1899: Appropriation of water; notice of appropriation; surface flow; subterranean flow; "percolating waters" defined; change of point of diversion.

Perry vs. Otay Irrigation District et al., 127 Cal. 565, February 15, 1900: Public character of district officers; assessments; set-off of salary; public funds; illegality of collection.

People vs. Linda Vista Irrigation District, 128 Cal. 477, May 3, 1900: Confirmatory act; purpose of special proceeding; constitutionality of confirmatory act; scope of judgment in special proceeding; bar to subsequent *quo warranto*; public nature of irrigation districts.

Sechrist et al. vs. Rialto Irrigation District et al., 129 Cal. 640, September 5, 1900: Demurrers; bonds; statute of limitations; laches; relief of taxpayer without first doing equity; district as plaintiff and defendant; proper and necessary parties.

Escondido High School District of San Diego County vs. Escondido Seminary of University of Southern California et al., 130 Cal. 128, September 27, 1900: Assessments; misnomer of owner of property assessed; conclusiveness of tax deed; discretion of board of directors in making levy; contents of tax deed; constitutionality.

Kerr vs. Superior Court, 130 Cal. 183, October 2, 1900: Mandamus; review of action of court; citation; discretion of court; undertaking of fruitless thing.

People ex rel. Fogg vs. Perris Irrigation District, 132 Cal. 289, March 21, 1901: Rights of intervenors on appeal; confirmation proceedings; impeachment of confirmation judgments.

Stimson vs. Alessandro Irrigation District, 135 Cal. 389, January 23, 1902: Powers of boards of directors; bonds delivered for executory contract; jurisdiction of court in special proceeding.

Baxter vs. Vineland Irrigation District et al., 136 Cal. 185, April 3, 1902: Bondholders as proper parties; collateral attack on bonds; rights of *bona fide* holders; assessments; acts of *de facto* officer; sale noticed for legal holiday; proof of allegations in complaint.

Nevada National Bank of San Francisco vs. Poso Irrigation District, 140 Cal. 344, September 25, 1903: Government lands; liability of patented land on bonds previously issued; inclusion of patented land.

Henry et al. vs. Vineland Irrigation District et al., 140 Cal. 376, September 28, 1903: Assessments; dismissal of action; effect on intervenor.

Leeman vs. Perris Irrigation District, 140 Cal. 540, October 9, 1903: Bonds; authority of board to dispose of bonds; *bona fides* of holder.

Turpen vs. Turlock Irrigation District et al., 141 Cal. 1, October 17, 1903: Condemnation; damage from seepage; reasonableness of construction work.

People vs. Perris Irrigation District, 142 Cal. 601, March 26, 1904: Notice of appeal; statute of limitations; fraud; special proceeding; effect of special proceeding on validity of organization; cause for action in equity.

Merchants' National Bank of San Diego vs. Escondido Irrigation District, 144 Cal. 329, August 3, 1904: Pledge of district property; constitutionality; public and private nature of irrigation districts.

Boskowitz et al. vs. Thompson et al., 144 Cal. 724, September 20, 1904: Rights of intervenors; liens; assessments; judicial power to declare and enforce liens; discretion of board of directors.

Best vs. Wohlford et al., 144 Cal. 733, September 20, 1904: Tax-deed assessment; description of land assessed; parol evidence on description; reference to map.

Jenison vs. Redfield et al., 149 Cal. 500, July 30, 1906: Ownership of proportionate share of district water; use of water outside district; damages; prescriptive right of landowner against district.

Western Union Telegraph Company vs. Modesto Irrigation Company et al., 149 Cal. 662, August 31, 1906: Assessments; real property; personal property; telegraph lines.

Best vs. Wohlford et al., 153 Cal. 17, February 8, 1908: Assessments; tax deed; sufficiency of description of land; least quantity of land; time when entitled to deed; abbreviations in notice of sale; statement of separate assessments.

Fogg vs. Perris Irrigation District, 154 Cal. 209, August 28, 1908: Notice and petition; fraud in organization; voidability of organization; decree of confirmation; contents of notice of hearing; changes in boundaries; bonds; effect of invalid and valid decrees.

De La Beckwith vs. Sheldon et al., 154 Cal. 393, October 13, 1908: Appropriation; lease from district; contract; confidential relations of contractors; place of diversion; prosecution of work under notice of appropriation; admissibility of evidence; magnitude of enterprise; lapse of district's rights; proper parties.

Tulare Irrigation District et al. vs. Collins, 154 Cal. 440, October 20, 1908: Execution sale; public trust; estoppel of district.

Stowell vs. Rialto Irrigation District, 155 Cal. 215, February 17, 1909: Contract to deliver bonds; purposes of bond exchange; form of bonds; negotiability.

Chinn et al. vs. Superior Court of San Joaquin County, 156 Cal. 478, November 19, 1909: Judicial power of courts; appeals from board of supervisors; constitutionality.

Walnut Irrigation District vs. Burke et al., 158 Cal. 165, 168, August 1, 1910: Appeals; place of use of water; prior rights; use of water within district; rules of water delivery.

Haese vs. Heitzeg, 159 Cal. 569, March 16, 1911: Assessment; delinquent tax deed; good faith of district; stipulation; parties bound by judgment *in personam;* confirmation proceeding; *de facto* corporation; rights of *bona fide* holders.

In re Bonds of the South San Joaquin Irrigation District, 161 Cal. 345, November 15, 1911: Constitutionality; effect of unconstitutionality of one provision on entire act; title of act.

Imperial Water Company No. 1 vs. Board of Supervisors of Imperial County et al., 162 Cal. 14, January 8, 1912: Writ of review; creation of public corporations; judicial character of board of supervisors; constitutionality of section and of entire act; signatures to notice of petition; contents of notice; due process of law; proof of publication; evidence on signatures; qualifications of petitioners; inclusion of lands; consideration of evidence on *certiorari.*

De La Beckwith vs. Sheldon et al., 165 Cal. 319, April 16, 1913: Novation; substitution of contract; revival of canceled contract; effect of new contract; effect of intervening rights.

Imperial Land Company et al. vs. Imperial Irrigation District et al., 166 Cal. 491, December 8, 1913: *Mandamus;* assessment; election petition; concurrent jurisdiction of superior court.

De La Beckwith vs. Sheldon, 168 Cal. 742, December 10, 1914: Construction of contract; allegation of value of bonds; lien on property of company.

Decker vs. Perry, 35 Pac. 1017, February 28, 1894: Illegal assessment; election; payment under protest; averment of district organization.

Hewel vs. Hogin, 84 Pac. 1002, November 17, 1905; March 15, 1906: Permission to amend; lithographic signature; funds for payment of bonds; *mandamus;* interest on interest coupons; statute of limitations.

Healey et al. vs. Anglo-Californian Bank, Limited, et al., 90 Pac. 54, March 27, 1907: Bids for construction; forfeiture; notice for bids; plans and specifications.

Nevada National Bank of San Francisco vs. Board of Supervisors of Kern County et al., 91 Pac. 122, May 28, 1907: Jurisdiction of superior court; levy by supervisors *vice* directors; expenses of levy; erroneous direction in decree; effect of judgment on litigated obligation; constitutionality; time of levy by supervisors; provision for other creditors; laches.

Commercial National Bank of Ogden vs. Schlitz, 91 Pac. 750, July 31, 1907: Filing of notice to move for new trial; assessments; dissolution; delinquent tax deed; description of property; prescription as affected by payment of taxes.

McPherson vs. Alta Irrigation District et al., 112 Pac. 193, October 18, 1910: *Res adjudicata*; new issue in appellate court; acquiescence of plaintiff in existing conditions.

Harelson vs. South San Joaquin Irrigation District et al., 128 Pac. 1010, November 8, 1912: Inclusion of lands; "another source" of irrigation defined; estoppel of landowner on exclusion; limits of discretion of board; *mandamus* as remedy.

Nahl vs. Alta Irrigation District et al., 137 Pac. 1080, November 22, 1913: Maintenance of irrigation ditch; duty of owner; degree of care required; liability for extraordinary floods.

Byington et al. vs. Sacramento Valley West Side Canal Company et al., 148 Pac. 790, April 29, 1915: *De facto* character of district; illegal organization; dissolution; public use; estoppel to deny title of lessor; *ultra vires* lease; transfer of franchises; constitutionality; administration of public use; *mandamus*; protection of incipient right; public service corporation; preferential water rights; subversion to private use.

FEDERAL CASES.

Bradley et al. vs. Fallbrook Irrigation District et al., 68 Fed. 948, July 22, 1895: Relief in equity; constitutionality; public use; due process of law.

Miller vs. Perris Irrigation District et al., 85 Fed. 693, February 21, 1898: Corporate existence; challenge by private parties; effect of state decisions on federal courts; conclusiveness of confirmation decrees; statutory bar to attack on illegality of organization; accrual of cause of action.

Alessandro Irrigation District vs. Savings and Trust Company of Cleveland, Ohio, et al., 88 Fed. 928, June 29, 1898: Bonds; cross bill.

Perris Irrigation District vs. Savings and Trust Company of Cleveland, Ohio, et al., 88 Fed. 989, June 29, 1898: Bonds; cross bill.

Miller vs. Perris Irrigation District et al., 92 Fed. 263, February 20, 1899: Bonds; labor and material; innocent purchasers; pleadings; consideration; attack on organization; restoration of consideration.

Shepard vs. Tulare Irrigation District, 94 Fed. 1, April 24, 1899: *Mandamus*; federal jurisdiction; bond fund; demand on county treasurer; allegations of regularity in issuance.

Herring vs. Modesto Irrigation District, 95 Fed. 705, June 30, 1899: Allegation of failure to perform duty; jurisdiction of federal courts; *mandamus*; constitutionality; decisions of California courts; corporate character of district; estoppel of district to plead illegal organization; construction of statute of limitations; discretion of supervisors; effect of exclusion of lands on bonds.

Miller vs. Perris Irrigation District et al., 99 Fed. 143, January 15, 1900: Estoppel of municipality; rights of *bona fide* bondholders; duty of directors; binding force of judgment in special proceeding; effect of *quo warranto* on bonds.

Perris Irrigation District vs. Thompson, 116 Fed. 832, May 5, 1902: Relief of bondholder; purport of confirmation proceedings; bonds as evidence of corporate character; president of district as bondholder.

Thompson vs. Perris Irrigation District, 116 Fed. 769, June 11, 1902: *Mandamus*; duty of supervisors; remedy of bondholders.

People ex rel. Brady vs. Browns Valley Irrigation District et al., 119 Fed. 535, November 3, 1902: *Quo warranto*; constitutionality.

Board of Supervisors of Riverside County et al. vs. Thompson et al., 122 Fed. 860, May 11, 1903: Levy by supervisors; *res adjudicata*; *mandamus*; notice to supervisors; effect of act of 1897 on districts previously organized; competency of petition to supervisors as evidence.

Marra vs. San Jacinto and Pleasant Valley Irrigation District et al., 131 Fed. 780, April 27, 1904: Receivership; remedy on bonds; *mandamus.*

Wright vs. East Riverside Irrigation District, 138 Fed. 313, May 29, 1905: *Bona fide* bondholders; signatures to bonds; signatures to coupons; antedating.

Quinton et al. vs. Equitable Investment Company et al., 196 Fed. 314, May 6, 1912: Relief in equity; vacancies in office; powers of taxpayers; collateral attack on organization.

Perris Irrigation District vs. Turnbull, 215 Fed. 562, May 4, 1914: Issuance of summons; following state procedure.

Perris Irrigation District vs. Escher et al., 215 Fed. 566; May 4, 1914: Issuance of summons; following state procedure.

Fallbrook Irrigation District vs. Bradley, 164 U. S. 112, November 16, 1896: Constitutionality; authority of state courts; due process of law; public use; hearing before supervisors; public nature of irrigation districts; assessments.

Tregea vs. Modesto Irrigation District, 164 U. S. 179, November 16, 1896: Confirmation proceeding; adjudication therein; *res adjudicata.*

Tulare Irrigation District vs. Shepard, 185 U. S. 1, March 24, 1902: Notice and petition; corporate character of district; rights of *bona fide* bondholders; recital in bonds; determination of board of supervisors.

IV.

OUTLINE OF CALIFORNIA IRRIGATION DISTRICT ACT OF 1897 AS AMENDED TO 1915.

(For substance of supplemental acts and constitutional amendments, *see* discussion in main text on "Irrigation District Legislation Since the Act of 1897," p. 47.)

ORGANIZATION.

Who may sign organization petition.

SECTION 1. A majority in number of holders of title or evidence of title, including holders of possessory rights, to lands susceptible of irrigation from a common source and by the same system of works, representing majority in value of said lands, may propose the organization of an irrigation district. Such lands need not consist of contiguous parcels. Owners of undivided interests may sign for such interest and each such owner shall be considered as one assessment payer. Guardians, executors, administrators, or other persons holding property in a trust capacity under appointment of court may sign any petition provided for in the act, when authorized to do so by order of court.

Hearing on petition; report by State Engineer.

SEC. 2. Petition to be filed with supervisors and to set forth generally proposed boundaries and proposed water source or sources. Must be accompanied by undertaking, to be approved by supervisors, in double amount of probable cost of organizing and be presented at regular meeting, and also be published in some newspaper of general circulation printed and published in county where presented, together with notice stating time of meeting at which petition is to be considered. On or before day petition is presented to supervisors, copy thereof to be filed with State Engineer. Supervisors to determine sufficiency and regularity of petition within two weeks. If necessary legal requirements not complied with in petition, matter to be dismissed without prejudice. If supervisors determine that all requirements have been complied with in petition, copy of resolution so declaring to be forwarded to State Engineer, and further hearing postponed not exceeding one month in all. Upon receiving copy of resolution State Engineer to make such investigation as may be practicable, with view to determining whether any condition or conditions exist that would justify him in reporting against organization. State Engineer to report in writing within one month. If he reports that proposed project is not feasible, hearing of petition by supervisors shall again be continued, not exceeding one month, and petition shall then be dismissed, unless supervisors be requested in writing by three-fourths of holders of title or evidence of title to grant it; *provided*, that supervisors may modify proposed plans in accordance with recommendations of State Engineer. Failure of State Engineer to report, however, shall not invalidate organization of any district. On final hearing supervisors shall make any changes in proposed boundaries that are deemed advisable, but shall not exclude any land susceptible of irrigation from any of the sources proposed, nor include any lands which will not be benefited by irrigation from the proposed system of works. Any person whose lands are susceptible of irrigation from proposed sources may, in discretion of supervisors, be included.

Final hearing by supervisors.

SEC. 3. Upon final hearing supervisors reaffirm conclusions as to sufficiency of petition. Only new evidence against sufficiency to be heard.

SEC. 4. Finding in favor of sufficiency final against all except State of California, and suit by State must be brought within one year.

Divisions and representation for directors.

SEC. 5. At final hearing supervisors divide district into three or five divisions, as determined by petition. One director to represent each division and reside therein, but may be elected by divisions or at large, as provided in petition.

Election on organization.

SEC. 6. Notice of election on organization given by supervisors and published three weeks. Supervisors also establish election precincts. Election to be conducted as nearly as practicable in accordance with general election laws.

Officers to be elected.

SEC. 7. At organization election there shall be elected directors, assessor, tax collector, and treasurer. If petition so requests certain offices may be consolidated.

Qualifications of electors.

SEC. 8. No person shall be entitled to vote at any election held under the provisions of this act who does not possess all of the qualifications required of electors under the general election laws of the state.

Canvass of vote; filing order; contests.

SEC. 9. Supervisors canvass vote on second Monday succeeding organization election. Two-thirds vote required to carry organization. Candidates for offices receiving highest number of votes are elected.

SEC. 10. Supervisors file order on organization and election officers, after which organization complete. Thereafter, no lands embraced in district can be included in another district without consent of directors.

SEC. 11. Organization election may be contested in superior court within twenty days after canvass of vote. Appeal may be taken within thirty days from judgment and must be decided by supreme court within sixty days.

SEC. 12. Officers elected immediately enter on duties.

Organization of directors.

SEC. 13. On first Tuesday after election directors classify themselves by lot and two or three (depending on whether three or five elected) serve until next, and the others until the second, general February election. Elect president from their number and appoint secretary, each to serve during pleasure of directors. Directors fix salary and bond of secretary.

MANAGEMENT.

Meetings of directors; financial statement.

SEC. 14. Directors to hold regular monthly meetings at their office at time fixed by resolution. Time can not be changed for twelve months and then only two months after resolution ordering change and after publication of notice. Directors may hold special meetings. All meetings of directors and all records open to public. Majority of directors constitute quorum. At regular meeting in January of each year directors shall render and thereafter publish verified financial statement. Whenever act specifies first Tuesday in month for transaction of any business, regular monthly meeting may be substituted; and when regular monthly meeting is other than first Tuesday, new boards of directors shall organize at first regular meeting in March.

Powers of officers; limitations on indebtedness; by-laws; rules and regulations.

SEC. 15. Directors manage business affairs of district, make necessary contracts, employ agents, officers, and employees, and prescribe their duties. Directors and their employees may enter any land and make surveys; acquire by purchase, lease, or condemnation necessary rights and properties including canals and works constructed and being constructed, and stock of other corporations owning water properties; but no purchase in excess of ten thousand dollars can be made without prior petition by majority of owners representing majority in value of lands in district. Directors may also construct necessary works and perform any necessary lawful act that sufficient water may be furnished, take conveyances or contracts for property acquired, institute and maintain necessary actions, sue and be sued. Directors shall establish and print by-laws and rules and regulations. Shall have power generally to perform all necessary acts.

Change of boundaries of divisions and precincts; lease of works.

SEC. 15½. Directors may change boundaries of divisions and election precincts, but not less than sixty days prior to an election. May also lease works of district, or any part thereof, but only after prior publication for three weeks of intention to lease, and only to highest bidder, from whom bond shall be required.

Condemnation.

SEC. 16. Suits for condemnation to be brought under title seven, part three, Code of Civil Procedure.

USE OF WATER.

Public use.

SEC. 17. Use of water for irrigation of lands within any district and for domestic and other incidental beneficial uses within district, and rights of way necessary declared a public use subject to regulation and control of state.

Prorating of water.

SEC. 18. All waters distributed for irrigation purposes to be prorated to landowners on basis of assessments for district purposes; and any landowner may assign whole or portion of his apportionment.

GENERAL ELECTIONS.

Time; officers to be elected; bonds; special elections when default in general election; organization of board; term of office.

SEC. 19. General elections to be held on first Wednesday in February each second year after 1899, and assessor, collector, treasurer, and directors elected. Assessor, collector, and treasurer to hold office for two years. Assessor to execute bond for five thousand dollars, collector for not more than twenty thousand or less than five thousand dollars, treasurer for not more than fifty thousand or less than ten thousand dollars, and directors for five thousand dollars each. Where district appointed fiscal agent of United States additional bonds may be required by secretary of interior. If general election not held as provided, special election shall be called on petition of ten per cent of resident electors.

SEC. 20. Directors organize on first Tuesday in March following election. Term of office of directors is four years.

Notice and conduct of general elections; nominations; vacancies; qualifications of directors; consolidation of offices; number of directors and representation; recall.

SEC. 21. Notice of general election to be posted fifteen days prior to election. Directors to appoint election officers.

SEC. 22. Inspector is chairman of election board and may administer oaths, etc. Polls open 8 a.m. to 4 p.m.

SEC. 22*a*. Ballots to be provided by directors; form of ballot; voting.

SEC. 22*b*. Not less than ten days before an election ten or more electors may make nominations by petition.

SEC. 23. Voting conducted as nearly as practicable according to general election laws; counting of ballots; returns of election; recount.

SEC. 24. Directors publicly canvass election returns first Monday after election and declare result.

SEC. 25. Secretary records election returns, directors declare result, and secretary issues election certificates. In case of vacancy in office of assessor, collector, or treasurer, directors appoint, and if directors fail to fill vacancy within forty days, supervisors shall. In case of vacancy in board of directors, supervisors appoint. All officers appointed to fill vacancies serve until next regular election.

SEC. 26. A director shall be a resident and a freeholder of the district.

SEC. 27. Directors may consolidate or segregate offices of assessor, collector, and treasurer, provided consolidation or segregation is made thirty days prior to general election.

SEC. 28. On petition by a majority of owners, directors may order that at ensuing election either three or five directors shall be elected, and that they shall be elected by divisions or at large, but directors elected at large must nevertheless represent separate divisions and reside therein.

SEC. 28½. Any elective officer can be recalled at any time, recall petition to be signed by twenty-five per cent of highest vote cast for candidates at last general district election, and if elected by division, by twenty-five per cent therein. If petition sufficient, election called for between thirty-five and forty days later, or at general election if one to occur within between thirty-five and sixty days. Nominations of candidates for recall elections to be made as other nominations. Vote for candidate not counted unless voter voted on recall. Majority vote determines result. Procedure identical with that in regular election. If recall unsuccessful no further petition allowed within six months.

TITLE TO AND SALE OF PROPERTY.

SEC. 29. Title to all property acquired by district shall vest in district and be held in trust for it and is dedicated to the uses and purposes set forth in the act. Directors authorized to hold, use, acquire, manage, occupy, and possess such property, and may sell property no longer necessary.

ISSUANCE OF BONDS.

Estimate by directors; report by State Engineer; vote; form and term of bonds; interest rate; sale of bonds; price.

SEC. 30. Directors estimate and determine amount of money necessary to be raised and for that purpose shall make all needed surveys and plans under direction of competent irrigation engineer. Copy of engineer's report to be sent to State Engineer, who shall examine and make further examinations necessary and report to directors within ninety days, giving his conclusions as to the supply of water available and the feasibility of the project. Directors then, when petitioned by majority of owners, representing majority in value of lands, shall call election on bond issue. Notice of election must be given for twenty days. Election to be held as nearly as practicable in conformity with provisions governing election of officers. Alternative questions as to issuance of bonds may be submitted separately on same ballot. Majority vote required to carry bonds.

SEC. 31. Bonds payable in twenty series—two per cent at end of twenty-one years and twenty-two years; three per cent at end of twenty-three years and twenty-four years; four per cent at the end of twenty-five years, twenty-six years, twenty-seven years, and twenty-eight years; five per cent at the end of twenty-nine years, thirty years, thirty-one years, and thirty-two years; six per cent at the end of thirty-three years, thirty-four years, thirty-five years, and thirty-six years; seven per cent at the end of thirty-seven years and thirty-eight years; eight per cent at the end of thirty-nine years and forty years; provided that if so specified in petition, bonds may be in less than twenty series and be payable at end of shorter periods. Bonds bear interest at not to exceed six per cent, payable January 1 and July 1. Denomination not less than one hundred nor more than one thousand dollars, and bonds are negotiable.

SEC. 32. Directors may sell bonds as necessary but only after resolution and advertisement, and must go to highest bidder, or any or all bids may be rejected.

SEC. 32½. Bonds authorized before amendment of 1913 removing par limit but not sold may be sold for less than par if approved at special election by two-thirds vote.

Payment of bonds.

SEC. 33. Bonds and interest thereon to be paid from annual assessments on real property of district, and all such real property liable to assessment for such purpose. (*See* exemption of improvements, section 35.)

Special assessment to complete works if funds insufficient.

SEC. 34. If money raised from bond sales be insufficient for completing works, and more bonds not voted, directors shall levy assessment for such purpose if approved by majority vote at a special election.

ASSESSMENTS.

Duties of assessors; deputy assessors; equalization; levy and collection; lien.

SEC. 35. Assessment of all real estate in district to be made between first Monday in March and first Monday in June at full cash value, except that improvements, including trees, vines, alfalfa, and all growing crops and all buildings and structures erected or being erected, are exempted. In districts organized prior to amendment exempting improvements, improvements may be exempted at special election by vote of majority of resident owners of land subject to taxation therein.

SEC. 36. Assessor shall be allowed necessary deputy assessors at not to exceed five dollars per day.

SEC. 37. Assessor must deliver completed assessment book to secretary on or before first Monday in August, who shall give notice of equalization, to be made within between twenty and thirty days. Equalization shall be made by directors during session of not to exceed ten days, and within ten days thereafter secretary must have roll corrected and totaled.

SEC. 39. Within fifteen days after equalization directors shall levy assessment to cover interest and principal due on bonds, rentals or charges due or to come due during year on leases or contracts, and amount due on any obligation reduced to judgment. If directors fail to make assessments and levies, county assessment shall be used and supervisors shall make levy at expense of district. On failure of district collector or treasurer to act, county tax collector and assessor shall do so. Is duty of district attorney to ascertain each year whether necessary assessments have been levied and collected, and if there has been neglect or refusal by district officers, district attorney shall notify county officers authorized to act and upon their failure to act within thirty days shall take appropriate action in court to compel performance. For enforcement of levy and collection of assessment levied after adoption of amendment so providing, and to pay debt incurred after adoption of such amendment, attorney general of State shall take appropriate action on failure of district and county officers to act. All powers and duties respecting collection of assessments provided in sections 3820, 3821, 3822, 3823, 3824, 3825, and 3829 of the Political Code, as regards county assessors, shall apply as far as applicable to irrigation district assessors.

SEC. 40. Unpaid assessments become a lien after first Monday in March (*see* Stats. 1913, chap. 274, p. 415, relating to collection of assessments in two installments) and lien for bonds of any issue shall be a preferred lien to that for any subsequent issue.

Delinquencies; penalties; publication of delinquent notice sale.

SEC. 41. On or before November first assessment book delivered to collector and within twenty days collector must give notice that assessments are due and will become delinquent at 6 p.m. on last Monday in December. (*See* Stats. 1913, chap. 274, p. 415, relating to collection of assessments in two installments.) Ten per cent penalty added if not paid within time specified.

SEC. 41*a*. In lieu of selling property on delinquent list directors may direct collector to sue delinquent for amount due, in accordance with Code of Civil Procedure.

SEC. 42. Collector must publish delinquent list on or before February first, and time of sale specified in notice must be not less than twenty-one nor more than twenty-eight days from first publication.

SEC. 43. In addition to principal and ten per cent penalty, collector must collect fifty cents on each tract separately assessed and sale must be completed within three weeks.

SEC. 44. In case there is no purchaser in good faith for property offered for sale, whole amount of property assessed shall be struck off to district.

SEC. 45. Collector shall issue certificates of sale, in duplicate, one copy to be given to purchaser and one copy to be filed in office of county recorder.

SEC. 46. Secretary must enter in his records a description of land sold and on filing of certificate with county recorder, lien of assessments vests with purchaser and is only divested by payment of purchase price and two per cent per month from date of sale until redemption.

Redemption of property sold for delinquent assessments; effect on dissolution; deed; misnomer.

SEC. 47. Redemption may be made by owner or any party in interest within five years, or at any time thereafter before deed has been delivered. County recorder must file certificates of sale. If property not redeemed collector must, on demand, issue deed, subject to fee of two dollars.

SEC. 47½. Redemption period shall not bar dissolution of a district, and in any district that has been dissolved or is in process of dissolution, if land has been sold for delinquent taxes and redemption period has not expired, owner or any one in interest may redeem it. After dissolution, deed to unredeemed property shall be issued by county treasurer.

SEC. 48. Prescribes form of deed. When duly acknowledged or proved deed is, except against fraud, conclusive evidence of regularity of previous proceedings, and deed conveys absolute title, except that it is *prima facie* evidence of right of possession in case of lands owned by United States or State.

SEC. 49. Assessment book or delinquent list or copy thereof certified by collector, is *prima facie* evidence of facts and compliance with law.

SEC. 50. When land is sold for assessments correctly imposed, no misnomer or mistake relating to ownership affects sale.

SEC. 51. Collector to settle with secretary and treasurer on first Monday of each month, and within six days deliver to secretary statement under oath as to transactions.

PAYMENT OF BONDS AND INTEREST.

SEC. 52. Interest coupons paid from bond fund and whenever bond fund exceeds ten thousand dollars over amount necessary to pay interest due, district may after advertisement purchase from lowest bidders bonds not yet due to amount of said sum; but no bonds to be redeemed above par. If no bonds offered for sale, excess in bond fund to be invested in government or state bonds.

CONSTRUCTION OF WORKS.

Letting contract; payment of claims and care of funds; progress reports to State Engineer.

SEC. 53. After adoption of plans, and advertisement for twenty days, directors shall let work to lowest responsible bidder or bidders, or may reject any or all bids and readvertise, or many construct work under their own superintendence. Contracts for material to be awarded to lowest responsible bidder. Successful bidder to give bond for twenty-five per cent of contract price.

SEC. 54. Claims to be paid only on warrants. Sums in construction fund in excess of $25,000.00 may be deposited with county treasurer, who shall report receipts and disbursements second Monday in each month. District treasurer to report first Monday in each month.

SEC. 54½. During construction of work paid for from bonds, secretary to forward to State Engineer within one week after each regular meeting of board copies of progress reports made on such work; shall also forward to State Engineer copy of annual financial statement required by section 14, together with general report on

condition of works and other relevant matters. State Engineer to make such recommendations and comments as he may deem proper; he may also make further examinations, call for further information, or make further reports.

Payment for property or works or rental; tolls and charges; crossings; rights of way; dedication of waters.

SEC. 55. Costs of property and works to be paid out of construction fund, except that amounts due in yearly installments under lease or contracts shall be paid from annual assessments or from tolls and charges. For defraying expenses of organization, care, operation, management, and repair and improvement of works completed and in use, and above mentioned installments, directors may in lieu (in part or in whole) of assessments, fix rates of tolls and charges.

SEC. 56. Directors shall have power to construct works across any stream, street, railway, canal, etc.; and every company whose railroad shall be so crossed shall unite with the district in forming crossings, cost thereof to be determined by agreement, or as in taking of land. Rights of way granted over state lands, and all water rights within district belonging to state, given, dedicated, and set apart for uses of district.

DIRECTORS AND OFFICERS.

Salaries and mileage; interest in contracts and penalties.

SEC. 57. Directors to receive four dollars per day each, and ten cents per mile mileage, and necessary expenses when engaged in official business under order of board; except that in districts of over five hundred thousand acres, directors shall receive one hundred and fifty dollars per month each in lieu of per diem. Directors shall fix compensation of all officers; except that on petition of at least fifty or a majority of freeholders, directors shall submit schedule of salaries and fees at any general election. Above petition to be presented between twenty and forty days prior to election.

SEC. 58. No director or officer shall be interested in any contract, violation constituting misdemeanor and resulting in forfeiture of office and liability to fine or imprisonment, or both.

SPECIAL ASSESSMENTS.

Levy by special election; levy without election; emergency levies; ascertainment of rate.

SEC. 59. Directors may call special election on special assessment to be used for any of the purposes of the act, election to be held in conformity with section 30. Two-thirds vote necessary to carry. If carried shall be added to annual levy. Assessment not exceeding two per cent of value of assessable property may be levied in any one year without vote by four-fifths of directors, total amount not to exceed $75,000.00; *provided*, that if petitioned by voters equaling in number fifteen per cent of votes cast at last general election within thirty days, special election on such levy shall be necessary; *and provided*, that in case flow in canal unexpectedly interrupted, four-fifths of the directors may levy assessments in any one year, at time of annual levy, not exceeding forty thousand dollars for repair of works, without election.

SEC. 60. Rate of assessments levied under act to be ascertained by deducting fifteen per cent for delinquencies and dividing sum voted by remainder of aggregate assessed value. Special assessments shall be collected in same time and manner as other assessments.

INCURRING INDEBTEDNESS.

Limitation; indebtedness before first assessment and payment by warrants; interest on warrants. Special provisions for districts of over 500,000 acres.

SEC. 61. Incurring of debt limited by express provisions of act, except that before collection of first assessment, directors may incur indebtedness up to two thousand dollars, or, if district contains more than four thousand acres, to one-half as many dollars as there are acres in district, and may issue warrants therefor, bearing interest at not more than seven per cent, and in no case exceeding fifty thousand dollars. Warrants to be payable not later than the first day of January after levying of first assessment.

SEC. 61*a*. Any warrant of district payable on demand, and presented for payment when no funds are available therefor, shall draw interest at not to exceed seven per cent, until public notice given that funds are available. After public notice interest on warrants shall cease.

SEC. 61*b*. Directors of districts of over 500,000 acres may acquire system supplying lands thereon, and where part of system lies outside of State, may exchange bonds for all or portion of system, or for interest in or stock of corporation owning all or part of system.

SEC. 61*c*. Where directors have exchanged or agreed to exchange bonds for property rights in system, as in section 61*b*, court shall decree validity of bonds issued or to be issued.

APPORTIONMENT OF WATER.

SEC. 62. General provision regarding water commissioners.

SEC. 63. Directors shall keep water in ditches to full capacity in times of high water.

SEC. 64. Navigation and mining not to be impaired or affected by act, except that rights of way may be acquired over property used in mining.

SEC. 65. General provision disclaiming authorization of any diversion except with previous compensation in accordance with the law.

EXEMPTION FROM TAXATION.

SEC. 66. Rights of way, ditches, reservoirs, etc., and other property of like character belonging to any irrigation district, not to be taxed for state, county, or municipal purposes.

FUNDS.

SEC. 67. Creates bond fund, construction fund, and general fund.

CONFIRMATION PROCEEDINGS.

Proceedings by directors; proceedings by assessment payer; consolidation of actions; disregard of error; contests.

SEC. 68. After issue of any bonds or levy of any assessment directors may bring action in superior court to determine validity. Action shall be in nature of proceeding *in rem* and jurisdiction of parties interested may be had by publication of summons. Validity may be contested by any party interested within ten days, with right of appeal to supreme court within thirty days, which must be determined within three months.

SEC. 69. If no proceedings brought by directors, any assessment payer may bring such action within thirty days after assessment or bond issue, directors being made defendant.

SEC. 70. Similar contests shall be consolidated.

SEC. 71. Court must disregard any error, irregularity, or omission which does not affect substantial rights of parties to action.

SEC. 72. Contests shall only be made within time and in manner specified in act, and in any such action, all findings of fact or conclusions of directors, or of supervisors, shall be conclusive, unless such action was instituted within six months after such finding or conclusion was made.

VIOLATION OF DUTY AND PENALTY.

SEC. 73. Violation of any express duty on part of any officer named in act shall render such officer liable on his official bond, and to removal from office by proceedings in superior court brought by any assessment payer.

EXCLUSION OF LANDS.

Covered by sections 74 to 84, inclusive. Land may be excluded in discretion of directors on petition of owner; *provided*, that upon petition it shall be duty of directors to exclude lands which are not susceptible to irrigation from a common source or by the same system of works with other lands of district, or from source or system chosen or adopted, or which are already irrigated, or entitled to be irrigated, from another source or by other works; except that no land irrigated by means of water pumped from an underground source shall be entitled to exclusion on account of being so irrigated if such land is or will be substantially benefited by subirrigation from works of district or by drainage works provided by district, but no owner of land so irrigated when district was organized and which has been so irrigated continuously each year exclusively by such means, shall be liable to assessment, except for interest and principal on district bonds. Holders of outstanding bonds are protected, by retaining lien against excluded lands for both bonds and interest, except where written assent of such bondholders to exclusion has been filed with district.

INCLUSION OF LANDS.

Covered by sections 85 to 97, inclusive. Owners of one-half or more of any contiguous tract adjacent to a district may petition for inclusion in said district. Directors may deny petition after hearing or may grant petition if no objection is offered by any person interested in district or proposed change, or if objections offered are withdrawn. If objections to inclusion are made and not withdrawn and directors still believe it for best interests of district that lands be included, matter shall be determined by majority vote at special election in district. Directors may require, as condition precedent to inclusion, that petitioners shall pay such sums as they would have been required to pay had such lands been included at the time of organization. Adjacent public lands of United States may be included without petition. If directors find unconditional inclusion would injure land already in district by impairment of water right, or greater expense of water for additional lands, they may prescribe conditions for inclusion, by providing for priority of water right or additional annual payment or other just conditions.

REDUCTION OF BONDED INDEBTEDNESS.

Covered by sections 98 to 99½, inclusive. Where no bonds are outstanding, authorized bonded indebtedness may be reduced if carried by majority vote at special election called by directors. If there be bonds outstanding, bonded indebtedness may be reduced with the assent of outstanding bondholders. Reduction of bonded indebtedness shall in no manner affect any order of the court confirming validity of bonds.

LEASE OF WATER FOR MECHANICAL PURPOSES.

Covered by sections 100 to 105, inclusive. If no increased expenditure is involved, directors may lease water owned by it for mechanical purposes, not inconsistent with the provisions of the act. Notice of intended lease must be published for twenty days, sealed proposals received, and lease let to highest responsible bidder, or bids may be rejected. Rental on such lease shall be payable on thirtieth of December and thirtieth of June of each year. Lease may extend not exceeding twenty-five years. If rental not paid as due, amount may be doubled, and if not paid within ninety days thereafter, lease shall be forfeited to district, together with the works owned or controlled by lessee. Board may require lessee to excute bond or give other evidence of good faith.

DESTRUCTION OF UNSOLD BONDS.

Covered by sections 106 to 108, inclusive. Bonds remaining unsold after completion of system and payment of all demands may be destroyed on approval by two-thirds vote at special or general election called by directors.

SAVING CLAUSES.

Sections 109 and 110. Make districts organized prior to act subject to its provisions, so far as applicable, repeals original district act of 1887, etc.

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Publications of State Department of Engineering[1]

Report for the period, March 11, 1907, to November 30, 1908.

Second Biennial Report, December 1, 1908, to November 30, 1910.

Third Biennial Report, December 1, 1910, to November 30, 1912.

Fourth Biennial Report, December 1, 1912, to November 30, 1914.

Bulletin No. 1, Progress Report of Co-operative Irrigation Investigations in California, December 1, 1912, to November 30, 1914.

[1]Since the organization of the State Department of Engineering in 1907, publications relating to work executed in co-operation between the State and the several branches of the Federal Government have been published by the Government Printing Office, and lists thereof may be obtained from the Superintendent of Documents, Washington, D. C.